



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO23060**

Purchase Order Date 2/19/2014

PO Print Date 2/19/2014

Page Number 1 of 4

**Order From :**

B/E AEROSPACE INC  
88289 EXPEDITE WAY  
CHICAGO, IL 33172  
USA

VU-BEA001

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

*FAKED*  
*2/19/2014*

**Contact Name**

**Vendor Phone** 305-925-2600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** FedEx PI collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

*m/28300*

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	MS27039-08-07 <i>307</i>	SCREW	2/21/2014 Yes 2/21/2014		200.00 Each ✓	\$0.13	\$26.00
Line Total:							\$26.00
2	MS17984-C413 <i>332</i>	Quick Release Pin	2/21/2014 Yes 2/21/2014	FN	30.00 Each ✓	\$18.00	\$540.00
Line Total:							\$540.00
3	MS21042L4 <i>509</i>	Locknut	2/21/2014 Yes 2/21/2014	FN	3,000.00 Each ✓	\$0.14	\$420.00

*P/4/2/24*

**PO Instructions:**

Procurement Quality Clauses

A005 RIGHT OF ENTRY

A012 CHEMICAL AND PHYSICAL TEST REPORTS

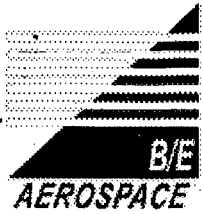
A016 PERSONNEL QUALIFICATION

A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT

A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS

A041 QUALITY

Note:



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
4	1000	EA	MS21043-4		M022647-000	ALCOA ROSAN 800 STAT 66776			

  
Jason Lewis  
Vice President of Quality

02/20/14

# Alcoa Fastening Systems



Packing Slip



Packing Slip: 9948074540

Page: 1

Bill To: 5574  
B/E AEROSPACE, INC.  
P.O. BOX 025263  
MIAMI FL 33102-5263  
USA

Ship To: (14)  
B/E AEROSPACE CONSUM MGMT  
9835 NW 14TH ST  
MIAMI FL 33172  
USA

From:  
ALCOA FASTENING SYSTEMS  
AEROSPACE PRODUCTS  
FULLERTON OPERATIONS  
800 SOUTH STATE COLLEGE  
FULLERTON CA 92831  
USA

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
10/28/13	F440571	OKAP64			

Line/Rel	Item	U/M	Qty Ordered	Qty To Pack
8-1	AAT880 H41-4	EA	500,000	97,010

C/I: MS21043-4 *for 3*  
PO Item #: 8

\*\*\* TSO C-148 APPVD PART. TSO LABEL REQ'D \*\*\*

Cust Date: 11/12/13

Kay Date: 10/29/13

Lot: M022647-000 COO:MEXICO

Waybill: \_\_\_\_\_

ECCN: 9A991 Schedule-B Number: 7318.16.0000

HTS-Code: 7318.16.0060

The export classification appears above. You are responsible for all related export license requirements.

DUAL CERTIFIED TO: 2637654, NAS1291A4, N  
AS1291C4

MFG C OF C CHEM & PHYS TEST REPORT REQ  
CHARGES ON LINE # 9 INVOICE WITH LINE  
# 8

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653 • Eagle Products: Cage Code 66776 • Rosan Products: Cage code 66776

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST ACCOMPANY ALL RETURNS. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY IN QUANTITY, QUALITY, ETC. BETWEEN THE GOODS ACTUALLY SHIPPED AND/OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NOT LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON. FOR ITEMS CERTIFIED TO BPS-N-70, ALLOY VERIFICATION HAS BEEN PERFORMED ON PARTS WITH A DATE OF MANUFACTURE ON OR AFTER JANUARY 1, 2001. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.

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Pack Date	Order #	Cust PO	Ship Via	Weight Pkgs #
10/28/13	F440571	OKAP64		

Line/Rel	Item	U/M	Qty Ordered	Qty To Pack
----------	------	-----	-------------	-------------

SHIP VIA : FED EX GRD  
BUYER: ROHAN JOHNSON PHONE:  
MATERIAL COMPLIES WITH DFARS 252.225-700  
9 PREFERENCE FOR DOMESTIC SPECIALTY  
METALS" WITH ITS ALTERNATE 1.  
\*\*\*SHIP VIA FEDX GRD COLLECT ACCT# 0331-  
0149-0 IF 150 LBS OR MORE:SHIP FED  
EX FREIGHT ECONOMY COLLECT ACCT# 018757.

\*\*\*

DO NOT SHIP BY ANY OTHER WITHOUT PROPER  
WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0%-0 %.

\*\* BAR CODE PER QAP 33 CLAUSE P REQUIRED

\*\*\*

\*\* QAP 33.0 REV F CLAUSES: A,A.1,B,C,E,H  
,P,U,V. CLAUSE A.3 GENERAL TERMS  
APPLIES.

chem & phys certs

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9835 NW 14TH ST  
MIAMI FL 33172  
USA

From:  
ALCOA FASTENING SYSTEMS  
AEROSPACE PRODUCTS  
FULLERTON OPERATIONS  
800 SOUTH STATE COLLEGE  
FULLERTON CA 92831  
USA

Notice to Subsequent Purchaser or Repacker.  
These articles are imported. The requirements of 19 U.S.C. 1304 & CFR part 134 provide that the articles or their containers must be marked in a conspicuous place as legibly, indelibly & permanently as the nature of the article or container will permit, in such a manner as to indicate to an ultimate purchaser in the United States, the English name of the country of origin of the article.

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
10/28/13	F440571	OKAP64			

Line/Rel	Item	U/M	Qty Ordered	Qty To Pack
8-1	AAT880 H41-4	EA	500,000	97,010

C/I: MS21043-4 *Rev 3*  
PO Item #: 8  
\*\*\* TSO C-148 APPVD PART. TSO LABEL REQ'D \*\*\*

Cust Date: 11/12/13  
Kay Date: 10/29/13

Lot: M022647-000 COO:MEXICO  
Waybill: \_\_\_\_\_ ECCN:9A991 Schedule-B Number:7318.16.0000  
HTS-Code:7318.16.0060

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DUAL CERTIFIED TO: 2637654, NAS1291A4, N  
AS1291C4  
MFG C OF C CHEM & PHYS TEST REPORT REQ  
CHARGES ON LINE # 9 INVOICE WITH LINE  
# 8

## CERTIFICATE OF CONFORMANCE

This is to certify that all items noted above were produced in conformance with the contract, drawing specifications, and other applicable documents. All required process certifications, chemicals and physical test reports are on file subject to examination. This document must not be reproduced except in full and relates only to the items tested.

*Michele M. Varela*  
7452  
10/28/13  
MICHELE M. VARELA  
Quality Manager  
Fullerton Operations

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653 • Eagle Products: Cage Code 66776 • Rosan Products: Cage code 66776

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9835 NW 14TH ST  
MIAMI FL 33172  
USA

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Line/Rel	Item	U/M	Qty Ordered	Qty To Pack
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SHIP VIA FED EX GRD

BUYER: ROHAN JOHNSON

PHONE:

MATERIAL COMPLIES WITH DFARS 252.225-700

9 PREFERENCE FOR DOMESTIC SPECIALTY

METALS" WITH ITS ALTERNATE 1.

\*\*\*SHIP VIA FEDX GRD COLLECT ACCT# 0331-

0149-0 IF 150 LBS OR MORE:SHIP FED

EX FREIGHT ECONOMY COLLECT ACCT# 018757.

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\*\* BAR CODE PER QAP 33 CLAUSE P REQUIRED

\*\*\*

\*\* QAP 33.0 REV F CLAUSES: A,A.1,B,C,E,H

,P,U,V. CLAUSE A.3 GENERAL TERMS

APPLIES.

chem & phys certs

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Quality Manager  
Fullerton Operations

ALCOA GLOBAL FASTENERS, INC.

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CUSTOMER'S COPY


<b>Alcoa Fastening Systems</b>  Aerospace Products Fullerton Operations 800 S. STATE COLLEGE BLVD FULLERTON, CA 92831		<h1 style="margin: 0;">TEST REPORT</h1>		NO. <div style="font-size: 1.2em; font-weight: bold;">8192433</div>		Page 1 of 3		
				Lot No. <div style="font-size: 1.2em; font-weight: bold;">M022647-000</div>				
Supplier Item No. <b>AAT880</b>			Supplier Part No. <b>H41-4</b>					
Interchange Part No. <b>2637654 Rev. B</b>		Interchange Part No. <b>525-595-9006 Rev. N</b>			Interchange Part No. <b>H41-4</b>			
Interchange Part No. <b>MS21043-4 Rev. 3</b>		Interchange Part No. <b>N8862175/F Rev. 5a</b>			Interchange Part No. <b>NAS1291A4 Rev. 13</b>			
Interchange Part No. <b>NAS1291C4 Rev. 13</b>		Interchange Part No.			Interchange Part No.			
Manufactured Quantity <b>97010</b>	Mfg. Date <b>08/30/13</b>	Generic Description <b>6 POINT NUT</b>				Thread Size <b>.2500-28</b>		
PLATE/COAT <b>AMS 2410 REV. K</b>				HEAT TREAT <b>AMS-H-6875 REV. B</b>				
Non-Destruct <b>ASTM E1417 REV. 11 E1 SAMPLE</b>				PERFORMANCE <b>NASM25027 REV. 1</b>				
Material Spec. # <b>AMS 5731-L</b>	Mill Heat No. <b>970057</b>	Control Heat No. <b>AA19066B</b>		Material Supplier <b>CARPENTER TECHNOLOGY CORP</b>				
Special Process Requirements: <b>THREADS AND GAUGING PER AS8879 Rev.DR12</b> <b>and ASME B1.3M SYS. 22</b> <b>MIN EQUALS BKWY MAX EQUALS INST.</b> <b>*Conforms to AMS5732J after HT Treat</b> <b>MAGNETIC PERMEABILITY LESS THAN 2.0</b>								
<b>TEST RESULTS</b>								
TEST -----	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
1 - 010 TORQUE TEST	IN#	1	1	18.75	18.70		3.50	30.00
MIN. 3.50 & MAX 30.0 IN LBS (CYC	1,7,15)		7	12.30	11.65			
			15	10.40	10.30			
		2	1	14.80	13.55			
			7	10.05	9.05			
			15	10.10	7.60			
		3	1	12.20	11.55			
			7	7.35	6.50			
			15	6.85	6.75			
		4	1	12.05	12.00			
			7	14.00	13.30			
			15	9.95	9.20			
		5	1	15.45	15.95			
			7	11.95	11.75			
			15	9.70	9.70			
		6	1	19.20	18.00			
			7	13.55	13.30			
			15	12.90	12.05			
		7	1	16.30	14.85			
<b>TEST RESULTS - Continued on next page.</b>								
<b>THIS REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL AND RELATES ONLY TO THE ITEMS TESTED</b>								
The product identified on this Certificate has been manufactured, tested and unless otherwise noted, conforms in all respects to the applicable drawings, specifications and standards. Complete reports of physical and chemical tests are on file for examination. If no specified customer quality level is required, goods conform to sellers quality level. All Damages Exceeding Price are Excluded. For items certified to BPS-N-70 alloy verification has been performed on parts with a date of manufacturing on or after January 1, 2001. Quality system sampling plan conforms to the requirement of QAP EQ001, QAP EQ002, QAP EQ003. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.						 <b>MICHELE M. VARELA, QA MGR.</b>		

ALCOA GLOBAL FASTENERS, INC.

SHIPPER#: 9948074540

Rev. 12/02 Form 11199

This document shall not be reproduced, except in full, without the written approval of AFS.

<b>Alcoa Fastening Systems</b>  Aerospace Products Fullerton Operations 800 S.STATE COLLEGE BLVD FULLERTON, CA 92831	NO. <b>8192433</b>	Page 2 of 3
	Lot No. <b>M022647-000</b>	

Supplier Item No.  
**AAT880**Supplier Part No.  
**H41-4****TEST RESULTS - Continued from previous page.**

----- TEST ----- No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
2 - 020 TENSILE TEST BOLT & NUT THD STRIPPED	LBS	8	7	11.80	11.05		4580.00	
			15	9.70	9.20			
			1	14.70	14.15			
		9	7	11.05	9.75			
			15	8.30	7.55			
			1	14.25	12.45			
		10	7	10.90	9.80			
			15	8.25	7.60			
			1	11.05	12.70			
		11	7	8.30	8.25			
			15	7.25	6.85			
			1	11.00	10.75			
		12	7	8.50	7.85			
			15	7.55	6.85			
			1	16.05	16.00			
		13	7	12.35	10.50			
			15	8.90	7.40			
			1	10.90	10.50			
		14	7	8.05	7.75			
			15	6.70	6.25			
			1	15.60	13.60			
		15	7	11.20	9.90			
			15	9.35	8.00			
			1	15.05	14.60			
			7	10.25	10.15			
			15	9.35	9.45			

**TEST RESULTS - Continued on next page.****THIS REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL AND RELATES ONLY TO THE ITEMS TESTED**

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**Alcoa  
Fastening  
Systems**

 Aerospace Products  
Fullerton Operations  
800 S.STATE COLLEGE BLVD  
FULLERTON, CA 92831

# TEST REPORT

NO.

8192433

Page 3 of 3

Lot No.

M022647-000

 Supplier Item No.  
AAT880

 Supplier Part No.  
H41-4

**TEST RESULTS - Continued from previous page.**

----- TEST ----- No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
3 - 110 HARDNESS	RC	15	1	4850.00				
HRC 38-44		1	1	38.00	40.00			
7 - 113 Hardness (HR15N)	-	1	1	(79.50)	(80.40)			

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MICHELE M. VARELA, QA MGR.

ALCOA GLOBAL FASTENERS, INC.

SHIPPER#: 9948074540

Rev. 12/02 Form 11199

## CERTIFICATE OF TESTS

## ABNAHMEPRUEFZEUGNIS

## CERTIFICAT DE CONTROLE

CERT SERIAL# 000876659

**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

07/31/13

CUSTOMER/RESELLER/CLIENT

SELLER/VERKÄUFER/VENDEURPAGE 1 OF 4

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON, CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET  
READING, PA 19601

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE

CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE

DATE/DATUM/DATE

WEIGHT/GEWICHT/POIDS

220677353

LOS397401 L20371

07/31/13

3027.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:

970057

AA19066B

PRODUCT DESCRIPTION: CONSUMET A286 SOLUTION ANNEALED COLD FINISH SEAM FREE C  
----- HDG CL H2 STD CU/LM SOAP  
PART NUMBER: 732104

SPECIFICATION: FAIRCHILD MS 309 CLASS A REV 16 (09/15/10)  
----- AMS 5731 REAFFIRMED HEADING STOCK REV L (07/ /12)  
AMS 5732 REAFFIRMED REV J (07/ /12) (CAPABLE OF)  
FAIRCHILD MS 550 REV 2 (12/10/02)

SIZE 0.342000/IN. ( 8.69 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%):

C 0.04	MN 0.17	SI 0.17	P 0.015	LT .001	CR 14.36
NI 24.80	MO 1.29	CU 0.11	CO 0.08	AL 0.14	TI 2.01
V 0.27	B 0.0067				

THE CHEMICAL ANALYSIS OF THIS HEAT HAS BEEN PERFORMED BY THE CARPENTER SPECIALTY ALLOYS CHEMICAL LABORATORY, (CODE NUMBER PRI 100004), WHICH WAS ACCREDITED TO THE ISO/IEC 17025.

COUNTRY OF ORIGIN: U.S.A.

THIS MATERIAL HAS BEEN SAMPLED, TESTED, AND INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND MEETS ALL SPECIFICATION REQUIREMENTS.

THIS MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL REVISION 30, DATED 09/28/11.

THIS MATERIAL WAS MANUFACTURED FREE FROM MERCURY, RADIUM AND ALPHA SOURCE CONTAMINATION.

MILL HEAT TREATMENT:

TYPE	SOLUTION ANNEAL
TEMP	1800F ( 982C)
TIME AT TEMP	CONTINUOUS FURNACE
QUENCH	WATER

8/6/13

CONTINUED ON NEXT PAGE

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SHIPPER#: 9948074540

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## CERTIFICATE OF TESTS

## ABNAHMEPRUEFZEUGNIS

## CERTIFICAT DE CONTROLE

CERT SERIAL# 000876659

**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

07/31/13

CUSTOMER / BESTELLER / CLIENT

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A TRICKY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
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SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 4

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON , CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET  
READING , PA 19601

CUSTOMER ORDER NO. / BESTELL.-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS.-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
220677353 ✓	LOS397401 L20371	07/31/13	3027.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

970057 ✓

HARDNESS AS SHIPPED, HRBW -

85

(MIDRADIUS)

TENSILE AS SHIPPED, -----

KSI (MPA)

93.5 ( 645)

GRAIN SIZE PER ASTM E112: 7

(KALLINGS)

## CAPABILITY

1800 F ( 982 C ), 01 HR  
1325 F ( 718 C ), 16 HR

OIL TREAT  
AIR COOL

## COMBINATION STRESS RUPTURE

TEST TEMP 1200 F ( 649 C )  
STRESS, KSI (MPA) 70.0 ( 483 )  
ELONGATION % 40.3  
HOURS 71.4

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST  
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

TOTAL HOURS STRESS KSI (MPA)  
54 75.0 ( 517 )  
68 80.0 ( 552 )

(T) TRANSVERSE (L) LONGITUDINAL  
YIELD STRENGTH, (0.20 %) KSI (MPA) 104.0 ( 717 )  
TENSILE STRENGTH, KSI (MPA) 156.0 ( 1076 )  
ELONGATION IN 1.00", % 28.0  
REDUCTION OF AREA, % 54.0  
HARDNESS, HBW - 312.0

CONTINUED ON NEXT PAGE

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9948074540

## CERTIFICATE OF TESTS

## ABNAHMEPRUEFZEUGNIS

## CERTIFICAT DE CONTROLE

CERT. SERIAL# 000876659



## CARPENTER

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

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07/31/13

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 3 OF 4

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON, CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET  
READING, PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMAND

CARPENTER NO. / WLRKS-NR. / N° DE REFERENCE INTERNE

DATE / DATUM / DATE

WEIGHT / GEWICHT / POIDS

220677353 /

LOS397401 L20371

07/31/13

3027.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:

970057 /

## CAPABILITY

1650 F ( 899 C ), 02 HR  
1325 F ( 718 C ), 16 HR

OIL TREAT  
AIR COOL

COMBINATION STRESS RUPTURE  
TEST TEMP 1200 F ( 649 C )  
STRESS, KSI (MPA) 65.0 ( 448 )  
ELONGATION % 35.4  
HOURS 66.7

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST  
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

TOTAL HOURS STRESS KSI (MPA)  
51 70.0 ( 483 )  
65 75.0 ( 517 )

(T) RANSVERSE (L) ONGITUDINAL L  
YIELD STRENGTH, (0.20 %) KSI (MPA) 102.0 ( 703 )  
TENSILE STRENGTH, KSI (MPA) 156.0 ( 1076 )  
ELONGATION IN 1.00", % 22.0  
REDUCTION OF AREA, % 46.0  
HARDNESS, HBW - 314.0

CONTINUED ON NEXT PAGE

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SHIPPER#: 9948074540

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57-21-240

## CERTIFICATE OF TESTS

## ABNAHMEPRUEFZEUGNIS

## CERTIFICAT DE CONTROLE

CERT. SERIAL# 000876659

**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

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07/31/13

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 4 OF 4

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON , CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET  
READING , PA 19601

CUSTOMER ORDER NO. / BESTELL.-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS.-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
220677353 ✓	LOS397401 L20371	07/31/13	3027.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

970057 ✓

MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009. THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

JASON M RAYMOND  
ADMINISTRATOR - QUALITY  
CARPENTER TECHNOLOGY CORPORATION

GPV\*732104

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SHIPPER#: 9948074540



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LINE#	QUANTITY	U/M	PART NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
2	30	EA	MS17584C413		1356118	AVIBANK MFG.	84256		

  
Jason Lewis  
Vice President of Quality

02/20/14

\*\* DEARS \*\* \*\* CERT Q13-P \*\*



**AV BANK**  
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

**CERTIFICATE OF CONFORMANCE**

SHIPPER

DATE SHIPPED  
08/05/13

PAGE	OF	DATE ENTERED	SALES ORDER NO.
1	1	06/28/13	655679-8533

B 103866  
I B/E AEROSPACE (M & M)  
L P.O. BOX 025263  
L 10000 N.W. 15TH TERRACE

T MIAMI, FL  
O USA

33102-5263

S B/E AEROSPACE CONSUMABLE MGMNT  
H 9835 NW 14TH ST  
I  
P

T MIAMI, FL  
O USA

33172

CUSTOMER ORDER NO. QPXN53				CONTRACT NUMBER				RATING		ORDERED BY EDWARD		REC'D BY GLE		TERRITORY NO. 124	
P/B		CERT	INV	DO/260 REQ'D	PREP REQ'D	RESALE ON TAX	VAR %	TYPE OF INSPECTION			TERMS 1/2* 10, NET 30			FREIGHT NOHO/COLLECT	
0		1	1	3	N	N	R								
SHIPPED VIA FEDEX GROUND															
ITEM NO.		NO. SHIPPED		UNITS		PART NUMBER / DESCRIPTION						NO. BACKORDERED			
001		750		E		FEDEX ACCT# 0331-0149-0 QAP 33.0 CLAUSES A,A.1,B,C,E,H,P,U,V APPLY *** 3 LOT MAX *** BLC4BA13S MS17984C413 SHIP#: 1 QTY: 750 LOT:1356118 AREA :NS AISLE :F SEC:20						0		DUE : SHELF	
002		1		L		270-CERT Q13-P CHEM & PHY CERTS 001 SHIP#: 1 QTY : 1 LOT: AREA : AISLE : SEC:						0		DUE : SHELF	
PULLED BY		SHIPPED BY		SHIP VIA		DATE SHIPPED		WAYBILL/OTHER INFO				NO. OF PKGS.		WEIGHT	

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: *[Signature]*  
AUTHORIZED QUALITY CONTROL REPRESENTATIVE

\*\* DEARS \*\* \*\* CERT Q13-P \*\*



**AVIBANK**  
MFG., INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

**CERTIFICATE OF CONFORMANCE**

SHIPPER

DATE SHIPPED

08/05/13

PAGE	OF	DATE ENTERED	SALES ORDER NO.
2	1	06/28/13	655679-8533

B 103866  
I B/E AEROSPACE (M & M)  
L P.O. BOX 025263  
L 10000 N.W. 15TH TERRACE

T MIAMI, FL  
O USA

33102-5263

S B/E AEROSPACE CONSUMABLE MGMNT  
H 9835 NW 14TH ST

I

T MIAMI, FL  
O USA

33172

CUSTOMER ORDER NO. 0PXN53		CONTRACT NUMBER		RATING	ORDERED BY EDWARD	REC'D BY GLE	TERRITORY NO. 124
P/S 0	CERT 1	INV 1	DO 250 N	PREP N	RESALE R	TYPE OF INSPECTION	
TERMS 1/2% 10, NET 30						FREIGHT NOHO/COLLECT	
SHIPPED VIA FEDEX GROUND							

ITEM NO.	NO. SHIPPED	UNITS	PART NUMBER / DESCRIPTION	NO. BACKORDERED
			<p>TO OUR VALUED CUSTOMERS A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED FOR ALL PRODUCTS RETURNED TO AVIBANK TO REQUEST A RMA NUMBER CONTACT YOUR AVIBANK SALES ASSOCIATE AT 818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED FROM AVIBANK MFG., INC. IN ACCORDANCE WITH EXPORT ADMINISTRATION REGULATIONS OR INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. COMPLIANT WITH DFARS 252.225.7014 ALT 1</p>	
PULLED BY	SHIPPED BY SS	SHIP VIA	DATE SHIPPED 8/18/13	WAYBILL/OTHER INFO
		NO. OF PKGS.	WEIGHT	

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: *Dore Moore*  
AUTHORIZED QUALITY CONTROL REPRESENTATIVE





**AV BANK**  
MFG. INC.  
AEROSTRUCTURES DIVISION, A PCC COMPANY  
11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605  
PHONE: (818) 392-2100 • FAX: (818) 255-2094

# CERTIFIED TEST REPORT

1 of 1

CUSTOMER: B/E AEROSPACE (M & M)

SHOP ORDER NO./WORK ORDER NO.: 1356118

CUSTOMER P/N: MS17984C413

CUSTOMER P.O.: 0PXN53

QTY. SHIPPED: 750

AVIBANK P/N: BLC4BA13S RV. N

PART NAME: S/A STANDARD

PROCUREMENT SPEC: NAS1332

BODY WO.: 1355670 QTY. MFG'D: 750

PROCESS	PROCESSOR	TYPE/CLASS	SPECIFICATION
ANODIZE	JESSE'S PLATING, PACOIMA, CA.	II/2	MIL-A-8625 'F'
HEAT TREAT	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	CH900	AMS2759 'E'
HEAT TREAT	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	HRC 40 MIN	AMS2759 'E'
PASSIVATE	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	2	AMS2700 'E'

NO.	TENSILE (LBS)	TORQUE (IN LBS)	RETAINING DEVICE (IN LBS)	SHEAR (LBS)
1.	N/A	N/A	242 NF	10,070
2.	N/A	N/A	240 NF	10,040
3.	N/A	N/A	244 NF	10,110
4.				
5.				
REQT.	N/A MIN.	N/A MIN.	230 MIN.	9,200 MIN.

\* BF = BALL HOLE FAILED. \* TF = THREADS FAILED. \* NF = NO FAILURE. \*\* (S) = SINGLE SHEAR. \*\* (D) = DOUBLE SHEAR.

OTHERS: THESE PARTS WERE LAB TESTED PER 'NAS' QMTS AND FOUND ACCEPTABLE.  
SALES ORDER NO. 655679-8533.

AVIBANK MFG., INC. CERTIFIES THAT THE PARTS LISTED ABOVE WERE MANUFACTURED IN COMPLIANCE WITH YOUR PURCHASE ORDER. ALL TEST AND INSPECTION REPORTS ARE ON FILE AT AVIBANK FOR VERIFICATION.

AUTHORIZED SIGNATURE: NORMA CASTANAZA Q.C. CLERK  
WI-03-CTR-005 rev NC



DATE: 08/05/13

# CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

1355670

NAME

BAD

CLERK: AV

STAR METALS, LLC.

611 WEST LAMM ROAD

FREEPORT, IL 61032

An ISO 9001:2008 Registered Company

CERTIFICATE DATE: 4/30/13

CUSTOMER:

COPPER & BRASS

SALES

ORDER#: 198272

CUSTOMER PO#: 5400170861-R05

MATERIAL: 17-4PH ✓

DESCRIPTION: 265" ✓

HEAT NUMBER: E121874

QTY. SHIPPED: 2,103 LBS

CONDITION: ANNEALED

PART#

CERT MAT. NO.

XSSRD05811

## CHEMICAL COMPOSITION

C	Mn	Si	S	P	NI	Cr	Mo	Other Elements
.013	.740	.339	.0280	.029	4.67	15.42	.140	✓Cu=3.323 Co=.068
✓	✓	✓	✓	✓	✓	✓	✓	Ti=.001 Nb=.259 ✓
								Al=.002 B=.0015
								Sn=.005 N=.0310
								V=.0500 W=.020
								As=.003 Ca=.0023
								Ta=.002 Pb=.0002

## MECHANICAL VALUES

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
134	126	14	69	271 HB

## ✓ H900 HT CAPABILITIES 900F FOR 1 HR AIR COOL

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
191	174	12	63	403 HB

## ADDITIONAL REMARKS:

This material meets the chemistry specifications for AMS 5643R, ASTM A564-04, ASTM A484-10, ASME-SA-564 CHEM & MECH MACRO & MICRO STRUCTURES OK PER AMS 5643, DELTA FERRITE 0.35%.

MATERIAL IS FREE FROM MERCURY CONTAMINATION, EN10204 3.1.B  
MELT ORIGIN: ENGLAND

## MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:

Form# 7.9.0.0.4 Rev C

James P. Elliott-Quality Process Manager

P. C. Review

Sig. *[Signature]*

Date 5/10/13

Lot # 1343995

From: ThyssenKrupp Materials NA

Cust. AVIBANK MFG INC

CstAr

Wgt.: 2,103.000 LB

Del.: 2402471790

CstOr 729445

Date 05/10/2013

*[Signature]*



ALARD Machine Products  
1629 West 132<sup>nd</sup> Street, Gardena, CA 90249-2005  
Phone: (310) 323-4374  
Fax: (310) 323-6031  
[www.alardmachine.com](http://www.alardmachine.com)



APR 10 2008

CERTIFICATE OF CONFORMANCE

CUSTOMER

Adibond MTG

PURCHASE ORDER NO.

739831

PART NO.

16-4C

REV. AC

BUYER

Carlos Figueroa

ALARD SHIPPER NO.

92626

QTY. 50 010,8

ALARD SALES ORDER NO. 21912-5 ALARD SHOP ORDER NO. 21912-3

This is to certify that articles delivered under this shipper conforms to all applicable drawings and specifications furnished with or referenced in the above order, except for materials supplied by purchaser. Chemical and /or physical test reports and other evidence of conformance with the specifications are on file and subject to examination for a period of 10 years from date of shipment.

During the manufacturing processes, tests and inspections, this product has not come in contact with mercury or any of it's compounds, nor with any mercury containing device employing a single boundary of containment without specific approval of the purchaser. This requirement has been passed on to all sub-contractors.

By:

[Signature]  
AUTHORIZED ALARD REPRESENTATIVE

Date:

04-09-13

CERT REVIEW

MAIN LOT #

135648

COMPONENT LOT #

KB30070

NAME

SHOULDER RING

CLERK: GV ☐ NC ☒ DS ☐

Form AL203-REV. "E" 1-23-08

INSPECTOR  
TITLE



1901 N. Narragansett Ave. • Chicago, Illinois 60639  
773/804.0404 • Fax 773/804.0408  
www.industeel.com  
An ISO 9001 Certified Company

01/29/13

ISW Order/Invoice Number: 146210-00

SOLD TO: A9990  
AVIBANK MFG. CO.

SHIP TO: A9991  
AVIBANK MFG. CO.  
11500 SHERMAN WAY

P.O. BOX 9909  
NO HOLLYWOOD CA 91609

NO. HOLLYWOOD, CA 91605

CUSTOMER PO: 737859

085017BT

.0850"17-7 PH STAINLESS COND C CNT CLS

WEIGHT: 560

HEAT NUMBER: E111057

#### CHEMISTRIES

C	Mn	P	S	Si	Cr	Ni	Al
.077	.880	.023	.001	.286	16.630	7.690	.890
Mo	Cu	N					
.260	.346	.019					

#### PHYSICAL PROPERTIES

TENSILE: 245935C 297882CH

TORSIONS:

ROCKWELL #1:  
ROCKWELL #2:

BENDS:  
SALT SPRAY HOURS:  
COATING WEIGHT:  
GRAIN SIZE:

YIELD STRENGTH: 000000C/000000CH  
ELONGATION:

REDUCTION OF AREA:

#### CERT REVIEW

\*\*\* SPECIFICATIONS  
ASTM A313-10  
AMS 5678-F

MAIN LOT #

1356118

COMPONENT LOT #

KB30005

NAME

RING

CLERK: GV NCX DS

\*\*\*\* MERCURY FREE \*\*\*\*

TARIFF: 7223.00

NAFTA: B

MELT: US UNITED STATES

ORIG: US UNITED STATES

MILL: SIRI WIRE COMPANY

DFAR: Y

ROHS: Y

Rey Domingo, Quality Control Manager

FEB 01 2013



LOT #1317386

The values and specifications herein are passed through from the manufacturer directly to the customer.  
Please see reverse side or www.industeel.com for all Terms and Conditions of Sale.  
Material Properties Sheet 70403-MPS Version 1 Approved by BF 11/20/12

# Certified Inspection Report

03/01/13  
07:44:03

Alcoa Inc.  
Massena Operations  
Park Avenue East, Massena, NY 13662



Customer <b>Bralco Metals</b>	Customer P.O. No. <b>43-108226</b>	Customer Part No.	Alcoa Order No. <b>MMC-A5952-002</b>	Govt. Contract No.
Ship To <b>Bralco Metals</b> <b>15090 Northam St</b> <b>La Mirada, CA 90638</b>		We hereby certify that the material covered in this report has been inspected in accordance with, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, or as previously agreed to with customer and that samples representative of the material met the composition limits and have the mechanical properties shown on the face of this sheet. Manufactured under an ISO/TS 16949 registered quality management system. Melted and manufactured in the USA.		
		Zhou Wang, Quality Assurance Manager		

Date Shipped **03/01/13** Weight Shipped **961 lbs** Product **CFRB-SMS-ROD DIA. X 12 FT** BOL **000160946**  
Alloy - Temper **2024-T351** Size **0.81250 IN** Shape **DIA** Config **12 FT** QRR

## Specifications:

AMS 4120R (Except Marking)  
AMS-QQA-225/6A  
Material conforms to T4 requirements  
QA-225/6E (1)  
ASTM B211-12E1

Product produced and marked to the requirements of AMS-QQ-A-225/6 also meets the requirements of QQ-A-225/6.  
Product produced and marked to the requirements of QQ-A-225/6 also meets the requirements of AMS-QQ-A-225/6.

**THIS METAL HAS BEEN  
EXPOSED TO MERCURY OR MERCURY  
CONTAINING COMPOUNDS WHILE IN THE  
POSSESSION OF BRALCO METALS**

TEST REQUIREMENTS		Test	Test	Test	Test	Test	Test	Test	Test	Test
		U.T.S.	T.Y.S.	%Elong						
Max:										
Min:		62.0	45.0	10.0						

Test Results		Test	Test	Test	Test	Test	Test	Test	Test	Test
		U.T.S.	T.Y.S.	%Elong						
Lot / Work Order	No. of Tests									
MA20126199	7	70.7	55.0	23.0						
		69.7	53.0	21.0						

When 2 or more tests per lot are made, the highest and lowest values are reported.  
Analysis obtained from one or more samples in this lot.

## TEST ABBREVIATIONS

U.T.S. Ultimate Tensile Strength KSI T.Y.S. Tensile Yield Strength KSI %Elong Elongation % in 2"

Aluminum Association Chemical Composition Limits (In Weight %)

		%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%Others	%Others	%AL			
ALLOY	MAX	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15	Rem			
2024	MIN			3.8	0.30	1.2				Each	Total				

## Actual Started Chemistry

LOT/WORK ORDER		%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%OE	%OT	%AL			
										LT 0.05	LT 0.15	Rem			
MA20126199	MAX	0.08	0.24	4.7	0.64	1.5	0.01	0.11	0.02						
	MIN	0.07	0.23	4.4	0.63	1.4	0.01	0.04	0.02						

## NOTES:

Mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product.  
This alloy meets the requirements of EU 2002/95/EC (RoHS) and EU 2000/53/EC for lead, mercury, cadmium and hexavalent chromium.

## CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

KB20435

NAME

BUTTON HANDLE

CLERK: GV NC DS

Page 1

LOT # 1333503

Order No.: 343059

Sold to: AVIBANK MFG., INC. PO: 74008 Part: 14008

TR clerk signature: Angel Trayero

APR 05 2013

# CERTIFICATE OF CONFORMANCE

**JESSE'S PLATING**


12229 MONTAGUE ST.  
PACOIMA, CA 91331  
818-899-4600 VOICE  
818-899-0771 FAX

Date	Invoice #
7/2/2013	53094

**AS9100 & ISO 9001 CERTIFIED**

<b>Bill To</b>  AVIBANK MFG INC 11500 SHERMAN WAY NORTH HOLLYWOOD CA 91605
--

P.O. No.	Terms	Due Date	Rep	Ship Date	Ship Via	Project
743185	2% 15 Net 30	8/1/2013	JV	7/2/2013	Cust. Pickp	

Qty	Item	Description
5.010	5-4AB  MIL-A-8625F	REV P BUTTON HANDLE  ANODIZE PER MIL-A-8625F TYPE II CLASS 2 BLACK
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b><u>CERT REVIEW</u></b></p> <p>MAIN LOT # <u>125648</u></p> <p>COMPONENT LOT # <u>KB20435</u></p> <p>NAME <u>BUTTON HANDLE</u></p> <p>CLERK: GV <u>NC</u> DS <u>  </u></p> </div> <div style="width: 45%; text-align: right;">  <p>Q. C. Review                          Sig. <u>Nancy</u>                          Date <u>7/3/13</u></p> </div> </div>		
<p>WE HEREBY CERTIFY THE ABOVE PARTS ARE PROCESSED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. TEST REPORTS ARE ON FILE. ANY DISCREPANCY MUST BE REPORTED WITHIN 24 HOURS.</p>		

BY: [Signature] JORGE A VILLAGRAN

TITLE: [Signature] Q.A. MANAGER



Linear Motion. Optimized.

**SHIP TO:** AVIBANK MFG INC  
11500 SHERMAN WAY  
NORTH HOLLYWOOD CA 91605  
United States

CERTIFICATE OF CONFORMANCE		
<b>DELIVERY NAME:</b> 2819068	<b>DATE PRINTED:</b> 22-JUL-2013	<b>PAGE:</b> 1 of 1
<b>SHIP FROM:</b> ABEK LLC 492 Birch Street Bristol CT 06010 United States		
Tel: (860) 314-3921 Fax: (860) 314-3942		
<b>BILL TO:</b> AVIBANK MFG INC 11500 SHERMAN WAY NORTH HOLLYWOOD CA 91605 United States		

<b>PICK-UP DATE:</b> 22-JUL-2013	<b>SHIP METHOD:</b> UPS-Air-Red Next Day	<b>FREIGHT TERMS:</b> COLLECT - FROM ORIGIN	<b>FSCM:</b>			
<b>DELIVERY TERMS</b> EXWORKS FACTORY	<b>TAX NAME:</b> EXEMPT	<b>CUSTOMER TAX NUMBER:</b>	<b>WAYBILL:</b> 120176470162706506			
<b>SHIPPING INSTRUCTIONS:</b> ACCT# 60X10X		<b>TAG NUMBER/REF:</b>	<b>PO REF#:</b>			
ITEM NUMBER	REFERENCE ITEM	ITEM DESCRIPTION	CUSTOMER PO NO	ORDER NO	QTY ORDERED	QTY SHIPPED
SS0078121CXXXDF	SS0078121CXXXDF	5/64 440C GRADE 100 DFAR - SS0078121CXXXDF	741483	1701365	1.2	MPC
<b>COUNTRY OF ORIGIN:</b> United States *****EAR99*****						
<b>Lot Number</b> L0012469	<b>Quantity</b> 48.265	<b>Heat Number</b> 548226		<b>Hardness Test</b> HRC		<b>Hardness</b> 60-62
Material meets DFAR 252.225-7009:7014. Material certs meet ASTM F-2216. Material meets ASTM A276, AMS QQ S 783 and AMS 5630. ✓ Passivation meets SS8435 and AMS 2700 Heat Treat meets SS9213 and AMS 2759/5 Country of Origin (Mfg.): USA Country of Melt (Matl.): USA						
<b>CERT REVIEW</b>						
<b>MAIN LOT #</b> 1356118						
<b>COMPONENT LOT #</b> 1340588						
<b>NAME</b> BALL						
<b>CLERK:</b> GV NCX DS						
<b>NUMBER OF PACKAGES</b> 1			<b>GROSS WEIGHT</b> 4.0 LB		<b>VOLUME</b>	

THE UNDERSIGNED, INDIVIDUALLY, AND AS THE AUTHORIZED REPRESENTATIVE OF THOMSON INDUSTRIES INC., WARRANTS AND REPRESENTS THAT; ALL THE INFORMATION SUPPLIED ABOVE IS TRUE AND ACCURATE; THE MATERIAL COVERED BY THIS CERTIFICATION CONFORMS TO ALL CONTRACT REQUIREMENTS (INCLUDING BUT NOT LIMITED TO THE DRAWING AND SPECIFICATIONS); THE INSPECTION AND THE ANALYSIS HEREIN ARE TRUE AND ACCURATE.

These commodities if being exported from the United States must be exported in accordance with the Export Administration Regulations. Diversion contrary to U.S. Law is prohibited

QUALITY ASSURANCE MANAGER AUTHORIZED SIGNATURE

# CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE

CERT SERIAL# 000564343



## CARPENTER

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 200-2000 (800) 330-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADON, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

01/19/10

CUSTOMER/BESTELLER/CLIENT

SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 2

ABBOTT BALL COMPANY  
MIKE CHUBET MTL'S MGR  
RAILROAD AVENUE  
WEST HARTFORD CT 06110

ALN

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NUMBER/NUMÉRO DE RÉFÉRENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
213280	W49841	09/11/06	659

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226

PRODUCT DESCRIPTION: CONSUMET TYPE 440C BEARING QUAL HOT DRAWN SPHERODIZED PRECOAT

SPECIFICATION: AMS 5618 REV G (05/06)  
~~AMS 5618 REV G (05/06)~~  
~~AMS 5618 REV G (05/06)~~  
~~AMS 5618 REV G (05/06)~~

SIZE 0.075000 IN. ( 1.90 MM) RD WIRE INGOT 3

PRIMARY HEAT CHEMISTRY(WTX): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
1.03	0.40	0.70	0.017	LT .001	16.97
NI (XRF)	MO (XRF)	CU (XRF)			
0.15	0.44	0.04			

MACROETCH: TESTED TO ASTM-A-681: MAXIMUM VALUES ARE 1A. 2A. 3A. 4A

TENSILE AS SHIPPED. KSI(MPA) 110.0( 750)

MAX QUENCH HARDNESS. HRC - 61 - 1925 F( 1052 C) 30 MN OIL TREAT

INCLUSION RATING - ASTM E45 METHOD D

ID	THIN	HEAVY	THIN	HEAVY	THIN	HEAVY	THIN	HEAVY
3X	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3A	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FRACTURE GRAIN SIZE: 8

CARBIDE SEGREGATION - FREE FROM EXCESSIVE SEG (VILELLAS)

DECARB - NONE (VILELLAS)

MAX QUENCH HARDNESS. HRC - 61 - 1875 F( 1024 C)

30 MN AIR COOL

CONTINUED ON NEXT PAGE

*Diana M. Kiesel*

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
 Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification ou avis d'une tierce personne.  
 No representation or certification is made to other parties. Carpenter does not assume responsibility for any representation or certification to other parties.  
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**CERTIFICATE OF TESTS    ABNAHMEPRUEFZEUGNIS    CERTIFICAT DE CONTROLE**

CERT SERIAL# 000564343


**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 200-2000 (800) 330-4592

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- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

01/19/10

CUSTOMER/BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 2

ABBOTT BALL COMPANY  
MIKE CHUBET MTL'S MGR  
RAILROAD AVENUE  
WEST HARTFORD CT 06110

ALN

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NUMBER/NUMERO/N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/P.OIDS
213280	W49841	09/11/06	659

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226  
BILLET CHECK CHEMISTRY(WT%):

3A (TOP) | C | 0.06  
3X (BOTTOM) | | 0.04

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A.  
MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIRE-  
MENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1  
CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2007 TO  
THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE  
REVIEW INSTITUTE, CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH  
3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE  
IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

DATE REVISED: 01/19/10

DEANA KISSLING  
MET RELEASE REQUIREMENTS ANALYST  
CARPENTER TECHNOLOGY CORPORATION

7-13-13  
DFARS  
OK



*Deana M. Kissling*

**CERT REVIEW**

MAIN LOT #

1356118

COMPONENT LOT #

1355671

NAME

SPINDLE

CLERK: • GV — NC ☒ DS —

TRI STAR METALS, LLC.

1201 S. ADAMS AVE.

FREEPORT, IL 61032

An ISO 9001:2008 Registered Company

CERTIFICATE DATE: 3/6/13

CUSTOMER: COPPER &amp; BRASS SALES

ORDER#: 194933

CUSTOMER PO#: 5400169032-R05

MATERIAL: 17-4PH

DESCRIPTION: .130" X 12"

HEAT NUMBER: E120543

QTY. SHIPPED: 863 LBS

CONDITION: ANNEALED

PART #: XSSRD05808

**CHEMICAL COMPOSITION**

C	Mn	Si	S	P	Ni	Cr	Mo	Other Elements
0.0160	.7700	.3560	.0260	.0250	4.6900	15.4500	.2500	Cu=3.3590 Co=.0600 Ti=.0050 Nb=.2740 Al=.0030 B=.0015 Sn=.0140 N=.0260 V=.0700 W=.0200 As=.0090 Ca=.0020 Ta=.0010 Pb=.0002

**MECHANICAL VALUES**

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
143	125	9	63	286 HB

**H900 AFTER HEAT TREAT CAPABILITIES 900F 1 HR AIR COOL**

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
211	197	17	48	429 HB

**ADDITIONAL REMARKS:**

This material meets the chemistry specifications for: ASTM A564-04, RoHS COMPLIANT, SAE AMS 5643R. DFARS COMPLIANT.

MATERIAL IS FREE FROM MERCURY CONTAMINATION. EN10204 3.1.B  
MELT ORIGIN: ENGLAND

**MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA**

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:

Form# 7.9.0.0.4 Rev C

James P. Elliott - Quality Process Manager



APR 20 2013

LOT #1337628

From: ThyssenKrupp Materials NA

Cust. AVIBANK MFG INC

Del.: 2402421035

CstAr

CstOr 729445

Wgt.: 269.000 LB

Date 04/13/2013

# OUTO KUMPU

**In Accordance With EN 10204.3.1**

Rechnungs-Nr Invoice/Cons No No de facture	81270	Bestell-Nr Customer Order No No de commande client	236042	NORM 17/4PH(630) Rev 09-13-11 (UNS 817400) COND. A	SPECIFICATION NORME	
ADDRESS Tri Star Metals LLC 611 W.Lamm Rd Freeport, Illinois 61032 USA 61032	Material Value Center No No de matiere centre	AV198821/02	Lieferzustand Supply Condition Etat de livraison	SOFTENED AND DESCALED	Produkt Article Produit	8.00 mm Round
	Material Article Produit	3 rod coils for 2.016t	Reihenfolge Serial No No de Contes	E120543		

Schmelzanalyse					Cast Analysis					Analyse de Coulée	
%C	%Si	%Mn	%P	%S	%Cr	%Mo	%Ni	%V	%Nb	%Al	%B
0.0160	0.3580	0.7700	0.0280	0.0280	15.4500	0.2800	4.8900	0.0050	0.2740	0.0030	0.0015
%Cu	%Sn	%N	%W	%W	%As	%Ga	%Ta	%Pb			
0.0600	3.3590	0.0140	0.0260	0.0700	0.0200	0.0090	0.0020	0.0010	0.0002		

Mech und phys Eigenschaften		Mechanical and Physical Properties			Caractéristiques mécaniques	
0.2%PS kPSI	1.0%PS kPSI	UTS kPSI	RA%	Korngröße Grain Size Taille de grain	Dehnung % Elongation % Allongement %	Hard Hardness Dureté
113.666	133.290	136.916	66.3	7.5 7.5	3.5	326.00
Decarb	Max	Batch Average	Batch Percentage	Cleaness ABCD<1		
				Inter-crystalline Corrosion Test		

Additional Information  
 .Delta Ferrite Content - 0.04%  
 H900 results-  
 Rp0.2 197ksi  
 Rm 211ksi  
 A40 16.7%,  
 Rm4 47.9%  
 HB 429  
 Free from known Mercury or Radium Contamination  
 Material free from welds  
 Melting Practice:- EAF and AOD  
 Solution annealed at 1900F +/- 25 for 1.5Hrs  
 Material melted and rolled in Sheffield, England by Outokumpu Stainless Ltd.  
 Ultrasonic to AMS2630 & Magnetic Particle to AMS 2303 both Pass No Chi  
 or Sigma phases at 100x per ASTM E407 Macro and Micro structure OK per  
 AMS 6643 Chemistry, melt practice, material integrity and capability of

## EHSQ Manager

RA Eubank

**Rob Charlesworth**

Date 03/07/2012

This order was manufactured according to a Quality System registered to ISO 9001:2008 and approved by TÜV Nord. Certificate Registration No. 44 100 116408

[illegible][illegible][illegible]

From: ThyssenKrupp Materials NA

Cust. AVIBANK MFG INC

Del.: 2402421035

CSTAR

CstOr 729445

Wgt.: 269.000 LB

Date 04/13/2013

FEB 51

APR 20 2013

LOT #1337628

John L. Zambetti

Order No: 3533554  
Time 17:47:03



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

A08040  
Cust. NO.: 737614  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

AVIBANK MFG INC  
ATTN: ACCTS PAYABLE  
P O BOX 9909  
NORTH HOLLYWOOD CA 91609-1909

AVIBANK MFG  
11500 SHERMAN WAY  
\*\*\*RECEIVING CLOSED 11:30-12\*\*  
NORTH HOLLYWOOD CA 91605-5827

01/18/13

QTY	--DESCRIPTION--	--ITEM CODE--	--HEAT NUMBER--
	CF 2024 T4 QQA 225/6 RED		
175	BARS 5/16"RD 12'RL	84030	12062021-1
	CF 2024 T351 QQA 225/6 RED		
38	BARS 7/8"RD 12'RL	84070	121008-3-0290
3	BARS 1-1/16"RD 12'RL	84085	121009-3-0304
3	BARS 1-3/16"RD 12'RL	84095	1149637
1	REM 1 X 1-1/2"FL 35"LG	88245	3341-01B

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION (I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

### CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

K830017

NAME

BUTTON

CLERK: GV NC DS

JAN 24 2013



LOT #1315418

*Chip Sandoval*

CHIP SANDOVAL - Q.C. MANAGER

# 元生實業股份有限公司

YUAN-SHENG ALUMINIUM MFG. CORP

www.yasal.com.tw

No. 58 Lane 1274, Chung Cheng Rd., Chung Li, Taoyuan, Taiwan, R.O.C.  
TEL:886-3-4278991~6 / FAX:886-3-4222830 / E-mail:tw.qc@ysal.com.tw



## CERTIFICATE OF QUALITY / 品質保證書

Sold by / 供應商: Yuan-Sheng Aluminium Mfg. Corp. / 元生實業  
Ship to / 客戶: TUSKER INTERNATIONAL TRADING FRY STEEL  
Order No. / 訂單編號: 47129-1  
Material / 材質: 2024-T4 5/16"RD · 145"  
Quantity / 數量: 2115 PCS  
Lot No. / 批號: 12062021-1

Specification / 標準: ASTM-B211 REV 03, AMS-4120 REV R, QQ-A-225/6 REV E, AMS-QQ-A-225/6 REV A

No / 項目	Items / 名稱	Requirement / 實測要求	Unit / 單位								
1	Dimension / 規格:	0.313 - 145	in								
2	Tensile Strength / 抗拉:	>62	ksi								
3	Yield Strength / 降伏:	>45	ksi								
4	Elongation / 引長:	>10	%								
5	Hardness / 硬度:	>67	HRB								
6	Chemical composition / 成分:										
			Others Others								
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Max	Total	AL
	0.50	0.50	3.8-4.9	0.3-0.9	1.2-1.8	0.1	0.25	0.15	0.05	0.15	rem

### Quality checked / 品檢:

No / 項目	Items / 名稱	Measurement result / 實測結果	Unit / 單位
1	Dimension / 規格:	0.313 - 145	in
2	Tensile Strength / 抗拉:	68.73	ksi
3	Yield Strength / 降伏:	49.97	ksi
4	Elongation / 引長:	18.93	%
5	Hardness / 硬度:	69.9	HRB
6	Chemical composition / 成分:	OK	
			Others
			Others
			Others
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Checked by / 測量: 楊青璋

Approved by / 驗證: 楊銘達

Company stamp / 公司印章

Date / 日期: AUG. 15, 2012

Date / 日期: AUG. 15, 2012

Signature / 簽名: [Signature]

Signature / 簽名: [Signature]



JAN 24 2013

**This certificate is only validated when it is stamped / 品質保證書無公司章無效**

品質記錄編號: QP-009-08



FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

SEP 11 2012

LOT #1315418

CHIP BANDOVAL - Q.C. MANAGER

BY

[Signature]

12062021-1

5/16 AS

# CERTIFICATE OF CONFORMANCE

**JESSE'S PLATING**


12229 MONTAGUE ST.  
PACOIMA, CA 91331  
818-899-4600 VOICE  
818-899-0771 FAX

Date	Invoice #
5/14/2013	52378

<b>Bill To</b>  AVIBANK MFG INC 11500 SHIERMAN WAY NORTH HOLLYWOOD CA 91605
---

**AS9100 & ISO 9001 CERTIFIED**

P.O. No.	Terms	Due Date	Rep	Ship Date	Ship Via	Project
742610	2% 15 Net 30	6/13/2013	JV	5/14/2013	Cust. Pickp	

Qty	Item	Description
5,010	73-4AB  MIL-A-8625F	REV D BUTTON  ANODIZE PER MIL-A-8625F TYPE II CLASS 2 BLUE
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>CERT REVIEW</b></p> <hr/> <p>MAIN LOT # <u>1356118</u></p> <hr/> <p>COMPONENT LOT # <u>KB30017</u></p> <hr/> <p>NAME <u>BUTTON</u></p> <hr/> <p>CLERK: GV <u>NC</u> DS <u>  </u></p> </div> <div style="width: 50%; text-align: right;">  <p>Q. C. Review Sig. <i>Nancy</i> Date <u>5/15/13</u></p> </div> </div> <div style="margin-top: 20px; text-align: right;"> <p>WE HEREBY CERTIFY THE ABOVE PARTS ARE PROCESSED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. TEST REPORTS ARE ON FILE. ANY DISCREPANCY MUST BE REPORTED WITHIN 24 HOURS.</p> </div>		

BY: JORGE A VILLAGRAN

TITLE: QA MANAGER

# Fairbanks Wire Corp

260 Industrial Drive  
Hampshire, IL 60140  
847-683-2600

## CERTIFICATION

We certify the following information for the purchaser indicated:

**PURCHASER:** Avibank Mfg Inc

**MATERIAL:** Type 17-7PH Stainless Steel Wire  
Spring temper  
Non metallic, soap coated finish

**SIZE:** 0.0180  $+0.0003$   
 $-0.0003$

**PURCHASER'S ORDER NUMBER:** 737877

**SPECIFICATION NUMBER:** AMS 5678F

**NO. COILS & NET WEIGHT:** 1x Spools  
27 Lbs.

**HEAT NUMBER:** E120255

**TENSILE:** 282751 PSI

DFARS Melt: England Mill: USA Cond C: 282,751 psi  
CH900: 335,340 psi Mercury free

## ANALYSIS:

C	Mn	P	S	Si	Cr	Ni	Mo	N	Cu
0.085	0.86	0.027	0.001	0.298	16.63	7.71	0.16	0.02	0.245

## CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

KB30031

NAME

SPRING

CLERK: GV NC ☒ DS

Al  
0.861

LT HS

MAR 08 2015

Murt Holz  
Plant Manager  
Fairbanks Wire Corporation



2/27/2013

Document #: QD-007 Rev: 00.11.05

LOT # 1325904

Chokungu Muldepo Ltd.  
ASR Rod Mill  
Blenheim Road  
Sheffield, S1 3DZ  
Telephone: +44 (0) 114 243 1134  
Fax: +44 (0) 114 843 2152

**CHOKUNGU  
MULDEPO**

Prod-Nr  
Test certificate No  
No du certificat  
In Accordance With EN 10204 S.1  
**72697**

Rechnung-Nr  
Invoice/Com No  
No de facture

Bestell-Nr  
Customer Order No  
No de commande client

ADDRESS

NCIR	DESCRIPTION	NOTES
17-7PH / AISI 631		
		<b>5500 17 ROD SI</b>
Produktions-Nr Production No No de production	AV18894401	
Werkstoff-Nr Material No No de matériau	SOFTENED AND DESCALED	
Form Form	8.90 mm Round	
Größe Size	8 rod coils for 8.235t	
Gründungs-Nr Foundation No No de fondation	E120285	

**Schnitzanalysen**

**Cast Analysis**

**Analyses de Coûde**

Si	Mn	Si	Al	Cr	Mo	Co	W	Fe	As	Se	Te	U	U
0.0830	0.2980	0.8500	0.0270	0.0010	16.6300	0.1800	7.7100	0.0070	0.0010	0.8610	0.0026		
Si	Mn	Si	Al	Cr	Mo	Co	W	Fe	As	Se	Te	U	U
0.1280	0.2450	0.0080	0.0200	0.0400	0.0200	0.0010	0.0016	0.0030	0.0003				

**Mech und phye Eigenschaften**

**Mechanical and Physical Properties**

**Caractéristiques mécaniques**

0.5%R <sub>p</sub> MPa	1.0%R <sub>p</sub> MPa	UTS MPa	RA%	Reduction of Area %	Charpy Impact Energy J	Hardness HRC
28.572	94.374	113.555	53.6	0.0	0.0	0.00

Decor's	Max	Batch Average	Batch Percentage	Chemical
				Interpretation Convention Test

**Additional Information**

Chemistry to Meet AMS 6078 and ASTM A 915  
Material free from known mercury, radium, or alpha particle contamination  
Material melted and rolled in Sheffield, England by Chokungu Muldepo Ltd.

Technical Manager

*T. Clarke*  
T. Clarke

Date  
22/03/2012

This entry was manufactured according to a Quality System  
certified to ISO 9001 and registered by TUV NTA.  
Certification Registration No. 44 188 16466

1162

Chokungu Muldepo Ltd. is a company registered in England and Wales. The company is authorised to supply products to the UK market. The company is not responsible for the quality of products supplied to other markets.

Chokungu Muldepo Ltd. is a company registered in England and Wales. The company is authorised to supply products to the UK market. The company is not responsible for the quality of products supplied to other markets.

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Chokungu Muldepo Ltd.

MAR 08 2013



LOT #1325904





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	200	EA	MS27039-08-07		52995	LPC INDUSTRIES	62384		

  
Jason Lewis  
Vice President of Quality

02/20/14



**LFC industries**

A Division of RKR Technologies, LTD  
manufacturer of precision aerospace fasteners

1221 Corporate Dr. W • P. O. Box 5982  
Arlington, Texas 76006 (817) 640-1322

B/E Aerospace, Inc. - Consumables Management  
Self Release. Date: 11-14-13  
Signature and Stamp:

*Elaine Quarr*



# SHIPPING REPORT

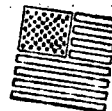
52995

PRODUCTION ORDER # 52995  
COUNTRY OF ORIGIN: USA

B/E AEROSPACE, INC.  
CONSUMABLES MANAGEMENT  
9835 N.W. 14TH ST.  
MIAMI, FL 33172

SHIP

## COMMENTS



DFAR 252-225-7009

RETURN OF ANY MERCHANDISE LISTED HEREON WILL NOT  
BE ACCEPTED WITHOUT PRIOR AUTHORIZATION

## CERTIFICATE OF CONFORMANCE

THE MATERIALS, PROCESSES AND PARTS FURNISHED WERE PRODUCED IN ACCORDANCE WITH APPLICABLE SPECIFICATION REQUIREMENTS, AND TEST REPORTS INDICATING CONFORMANCE ARE ON FILE SUBJECT TO EXAMINATION. OUR Q.C. INSPECTION SYSTEM CONFORMS TO ISO 9001.

*Elaine Quarr*

SIGNED

PARTIAL ☐

COMPLETE ☒

QTY SHIPPED

250000

QTY CONTAINERS:

35

LBS. PER M<sup>3</sup>:

3.98812

GROSS WEIGHT

1008.81

PCS USED TO ESTABLISH WT.

50

TARE WEIGHT

36.75

NET WEIGHT

972.06

SHIPPING CLERK:

*RL*

DATE

11-19-13

CONSIGNEE SIGNATURE:

DATE

SHIPPING METHOD

FedEx FBT

PAID

COLLECT ☒

EDITION

OMJF71

ITEM#

MS27039-0807  
ITEM# 1

QUANTITY

3

WEIGHT

250000

TOLERANCE

+0-5%

DATE DUE

10-15-2013

ECCN: EAR99, SCHEDULE B #7318.15-2000

LFC INDUSTRIES, DIV. OF RKR TECHNOLOGIES LTD.

1221 CORPORATE DR. W., ARLINGTON, TX, 76006

(817) 640-1322

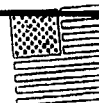
FAX (817) 652-1566

LFC IND. CAGE CODE # 62384, CERTIFICATION - FASTENERS IN THIS LOT WERE

MANUFACTURED, PROCESSED AND INSPECTED IN ONE RUN PER APPLICABLE

DRAWING, PROCUREMENT SPECIFICATION, ISO9001:2008, AND AS9100C.

<b>PART #</b> MS27039-0807		<b>REVISION</b> 3		<b>LOT #</b> 52995		<b>CUSTOMER</b> B/E AEROSPACE		<b>PO #</b> 0MJF71	
<b>QUANTITY</b> 250000		<b>PROCUREMENT SPECIFICATION</b> NASM7839 REV-1		<b>HEAT TREAT SPECIFICATION</b> AMS-2759/1		<b>DESCRIPTION</b> SCREW, PAN HEAD			
<b>FINISH TYPE</b> TYII CL2		<b>FINISH SPECIFICATION</b> AMS-QQ-P-416C		<b>BAKE</b> N/A		<b>CROSS RECESS</b>			
<b>THREAD SIZE</b> 8-32 UNC3A		<b>THREAD SPECIFICATION</b> H28/2		<b>HARDNESS REQUIRED</b> RC 26-32		<b>HARDNESS ACTUAL AVERAGE</b> RC 29			
<b>NDT SAMPLE SIZE</b> N/A		<b>NDT SPECIFICATION</b> N/A		<b>NDT ACCEPT</b> N/A		<b>NDT REJECT</b> N/A		<b>LOCKING ELEMENT SPECIFICATION</b> N/A	
<b>MAGNETIC PERMEABILITY SAMPLE SIZE</b> N/A		<b>PERMEABILITY ACCEPT</b> N/A		<b>PERMEABILITY REJECT</b> N/A					
<b>RECESS TORQ SAMPLE SIZE</b> N/A		<b>MINIMUM TORQ REQUIRED</b> N/A		<b>TORQ END LOAD</b> N/A		<b>TORQ ACCEPT</b> N/A		<b>TORQ REJECT</b> N/A	
<b>CHEMICAL COMPOSITION ON CERTIFIED MILL TEST REPORT</b>									
<b>MILL HEAT #</b> 10224350		<b>MATERIAL SPECIFICATION</b> AMS6322N		<b>MATERIAL GRADE</b> 8740		<b>SUPPLIER</b> WIRETECH			
<b>C</b> .40	<b>Mn</b> .86	<b>P</b> .009	<b>S</b> .005	<b>Si</b> .250	<b>Ni</b> .41	<b>Cr</b> .54	<b>Mo</b> .22	<b>Cu</b> .08	<b>V</b> 
<b>B</b> 	<b>Ti</b> 	<b>Al</b> 	<b>Co</b> 	<b>Pb</b> 	<b>Fe</b> 	<b>Sn</b> 	<b>Zn</b> 	<b>N</b> 	<b>Mg</b> 
<b>TENSILE SAMPLE SIZE</b> 32					<b>TENSILE STRENGTH REQUIRED</b> 1750#				
<b>DOUBLE SHEAR SAMPLE SIZE</b> N/A					<b>D. SHEAR STRENGTH REQUIRED</b>				
T1	2160	T12	2160	T23	2160	S1		S12	
T2	2160	T13	2160	T24	2140	S2		S13	
T3	2160	T14	2160	T25	2140	S3		S14	
T4	2160	T15	2140	T26	2140	S4		S15	
T5	2140	T16	2160	T27	2160	S5		S16	
T6	2140	T17	2140	T28	2160	S6		S17	
T7	2160	T18	2140	T29	2160	S7		S18	
T8	2160	T19	2140	T30	2140	S8		S19	
T9	2160	T20	2160	T31	2140	S9		S20	
T10	2140	T21	2160	T32	2160	S10		S21	
T11	2140	T22	2160			S11		S22	
<b>FATIGUE SAMPLE SIZE</b> N/A					<b>FATIGUE MAX LOAD</b>				
<b>FATIGUE MIN LOAD</b>					<b>METALLURGICAL SAMPLE SIZE</b> 32				
<b>F1 CYCLES</b>		<b>F1 LOCATION OF FAILURE</b>		<b>MICRO STRUCTURE</b> ACCEPT		<b>MACRO STRUCTURE</b> ACCEPT			
<b>F2 CYCLES</b>		<b>F2 LOCATION OF FAILURE</b>		<b>DECARBURIZATION</b> NONE		<b>CARBURIZATION</b> NONE			
<b>F3 CYCLES</b>		<b>F3 LOCATION OF FAILURE</b>		<b>UNTEMPERED MARTENSITE</b> NONE		<b>GRAIN FLOW</b> ACCEPT			
<b>F4 CYCLES</b>		<b>F4 LOCATION OF FAILURE</b>		<b>DISCONTINUITIES</b> ACCEPT					
<b>F5 CYCLES</b>		<b>F5 LOCATION OF FAILURE</b>		<b>DEVIATION/WAIVER NOTES</b> N/A					
<b>F6 CYCLES</b>		<b>F6 LOCATION OF FAILURE</b>							
<b>F7 CYCLES</b>		<b>F7 LOCATION OF FAILURE</b>							
<b>F8 CYCLES</b>		<b>F8 LOCATION OF FAILURE</b>							
<b>FATIGUE ACCEPT</b> 0		<b>FATIGUE REJECT</b> 0		<b>CERTIFICATION AMENDMENT NOTES</b> N/A					
<b>DATE</b> 11/19/2013		<b>SIGNATURE TITLE</b> DATA ENTRY SPECIALIST							
		<b>AUTHORIZED SIGNATURE</b> <i>Elaine Quares</i>		<b>AMENDMENT DATE</b>					





# PAULO

PAULO  
PRODUCTS  
COMPANY

4827 CHELSEA AVENUE  
KANSAS CITY, MO  
64130-2821

P (816) 861-7500  
F (816) 924-7300  
www.paulo.com

HEAT TREATERS AND FINISHERS OF METAL

## CERTIFIED INSPECTION REPORT

S L F C INDUSTRIES  
O 1221 CORPORATE DRIVE WEST  
D P O BOX 5982  
T ARLINGTON, TX 76006-5982

PAULO #: 1192289-02

DATE: 08/05/2013

DATE REC'D: 07/26/2013

SHIP TO CODE:

PART DESC: CROSS SECTION .1635"

PART NAME: SCREW PAN HEAD

PART #: MS27039-0807

QUANTITY: 275000 PCS

MATERIAL: 8740

CUSTOMER PO: 52995

CUSTOMER DRAY:

CUSTOMER JOB:

LOT #:

OTHER #:

### Requirements:

Process per SAE spec AMS 2759/1 rev E,

Final core hardness 29-32 HRC

### INSPECTION RESULTS:

CORE HARDNESS

Count: 13

Range: 29 -31 HRC

Certified Furnace # 501 Cycle/Load # 7

High heat temp: 1550±25° F Soak time: 60min

Quench: Oil

Temper furnace: 531 Temper temp/time: 1080±15° F/ 2hrs

\*Paulo is responsible for hardness testing only, customer responsible for all other testing. Paulo is not responsible for tensile testing\*

I CERTIFY THAT APPLICABLE MATERIAL PROCESSES HAVE BEEN PERFORMED IN ACCORDANCE WITH THE SPECIFICATION SHOWN ABOVE.  
I HAVE INSPECTED THE WORK AND THE SAMPLING AND RESULTS ARE AS INDICATED.

Approved By

Inspector Signature

CERTIFICATION  
REVIEWED  
ACCEPT  
LFC  
3



**WireTech, Inc.**

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

**LFC Industries**  
1221 Corporate Drive West  
Arlington, TX 76011  
USA

# CERTIFICATION

WORK ORDER  
**098933**

HEAT NO.  
**10224-350**  
SALES ORDER/ RLS  
**849562 / 1**  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

CUSTOMER P.O. <b>15075</b>	CUSTOMER PART	QUANTITY <b>5,113 Lbs</b>	CARRIERS <b>4</b>	LADING NO <b>00103434</b>	SHIPMENT DATE <b>04/22/2013</b>			
SPECIFICATION <b>L158740-101410b</b> <b>A-8740, AQ, SKFG, CHQ WIRE, SEAM &amp; DECARB FREE, SAIP Zinc Phosphate, Lime &amp; Stearate Coating,</b> <b>Size:0.141/0.142 Specifications: AMS 2301K, AMS6322N, MIL-S-S6049A, AMEND. 1, AMS-S-6049A</b>								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.40	.250	.86	.009	.005	.08	.41	.54	.22
Physical Properties								
Grain Size Jominy 1	Jominy 2	Jominy 3	Inclusions Macro	Cleanliness	Mill Source			
6 J5=55	J8=48	J10=45	S2-R1-C2	GOOD	F&S=0	Charter		
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	RESULTS						
Tensile Strength	KSI	84.2						
Yield Strength	KSI	71.6						
% Elongation	%	23.5						
% Reduction of Area	%	80.1						
Rockwell Hardness B Scale	HRB (s)	87						
Decarb (Total)	In	0.00						
<b>CERTIFICATION</b> <b>REVIEWED</b> <b>ACCEPT</b> <b>LFC</b> <b>4</b>								
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 46, decarburization performed as per IFI 140.</p> <p>The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.</p> <p>"LATEST REVISIONS OF ASTM"</p> <p>DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, &amp; 225.003(9)</p> <p>Material is free of mercury, radium, or alpha contamination.</p>								



# CHARTER STEEL

A Division of  
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road  
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

## CHARTER STEEL TEST REPORT

Reverse Has Text And Codes

Wiretech Incorporated  
6440 East Canning Street  
Attn: Andre Stephan  
Los Angeles, CA-90040

Cust P.O.	6961-1
Customer Part #	8740C1A060-C-R
Charter Sales Order	70038041
Heat #	10224350
Ship To #	4185055
Grade	8740 R SK FG AQ 1/4
Process	HRSA
Finish Size	1/4

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10224350											
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM %Wt	.40	.86	.009	.005	.250	.41	.54	.22	.08	.007	.003
	AL	N	B	TI	NB						
	.023	.0070	.0001	.002	.002						
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	56	56	56	56	55	52	50	48	47	45	42
	JOM14	JOM16	JOM18	JOM20	JOM24	JOM28	JOM32				
	40	38	36	35	33	31	30				

JOMINY SAMPLE TYPE ENGLISH = C  
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1  
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00  
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00  
CHEM. DEVIATION EXT.-GREEN =

REDUCTION RATIO = 616:1

Test Results of Processing Lot# 4185006, 4185055					
TENSILE	# of Tests	Min Value	Max Value	Mean Value	
REDUCTION OF AREA	1.0	80.5	80.5	80.5	TENSILE LAB = 0358-02
ROCKWELL B	1	74	74	74	RA LAB = 0358-02
	1	79	79	79	RB LAB = 0358-02

NUM DECARB = 1 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .001  
CP SPHERO % LAB = 0358-02 NUM SPHERO = 1 SPHERODIZATION = 85.0

Specifications: Manufactured per Charter Steel Quality Manual Rev 9,08-01-08  
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:  
Customer Document = AMS6322N/AMS2301K/COP3010W/BS2S147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

Charter Steel  
Saukville, WI, USA



This MTR supersedes all previously dated MTRs for this order

*Janice Barnard*  
Janice Barnard  
Manager of Quality Assurance  
01/15/2013

Rem: Load1,Fax0,Mail0

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

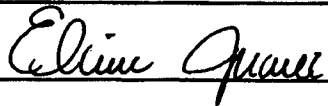
Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



## PLATING - PASSIVATION CERTIFICATION REPORT

<b>LOT #</b> 52995	<b>CUSTOMER</b> B/E AEROSPACE	<b>MILL HEAT #</b> 10224350
<b>PART #</b> MS27039-0807	<b>PO #</b> 0MJF71	<b>HARDNESS REQUIRED</b> RC 26-32
<b>QUANTITY</b> 250000	<b>FINISH TYPE</b> TYII CL2	<b>FINISH SPECIFICATION</b> AMS-QQ-P-416C
<b>TIME AND DATE OUT OF PLATE</b> N/A		
<b>TIME AND DATE IN OVEN</b> N/A		
<b>TIME AND DATE OUT OF OVEN</b> N/A		
<p>THE PARTS REFERENCED ABOVE WERE PROCESSED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF THE STATED FINISH SPECIFICATION. HYDROGEN EMBRITTLEMENT RELIEF, IF REQUIRED WAS PERFORMED AFTER PLATING AT 375 DEGREES (F), FOR A MINIMUM OF TWENTY THREE HOURS UNLESS OTHERWISE SPECIFIED. ACCEPTANCE TESTS RECORDS ARE ON FILE AT LFC INDUSTRIES AND ARE SUBJECT TO EXAMINATION UPON REQUEST.</p>		
<b>CERTIFICATION DATE</b> 11/19/2013		
<b>AUTHORIZED SIGNATURE:</b>		<b>SIGNATURE TITLE</b> DATA ENTRY SPECIALIST



LFC INDUSTRIES  
1221 CORPORATE DR. W  
ARLINGTON, TX 76006

PHONE # 817-640-1322  
FAX # 817-652-1566

**NO MERCURY/CLASS 1 OZONE CONTENT CERTIFICATION**

<b>CUSTOMER</b>	B/E AEROSPACE
<b>PO #</b>	0MJF71
<b>PART #</b>	MS27039-0807
<b>LOT #</b>	52995
<b>QUANTITY</b>	250000

PLEASE BE ADVISED, THE ABOVE REFERENCED PARTS HAVE NOT COME INTO CONTACT WITH MERCURY/CLASS 1 OZONE DEPLETING SUBSTANCES DURING THE MANUFACTURING, TESTING, INSPECTION, OR HANDLING PROCESS. THE PRODUCT DOES NOT CONTAIN MERCURY/CLASS 1 OZONE DEPLETING SUBSTANCES TO THE BEST OF THE KNOWLEDGE OF LFC INDUSTRIES.

AUTHORIZED SIGNATURE:

SIGNATURE TITLE

DATA ENTRY SPECIALIST

CERTIFICATION DATE

11/19/2013



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
7	120	EA	AN3-35A		325586	CAL SCREW		82507	

  
Jason Lewis  
Vice President of Quality

02/20/14



CALIFORNIA SCREW PRODUCTS CORPORATION  
14957 GWENCHRIS COURT  
PARAMOUNT, CALIFORNIA 90723-3423  
TEL (562) 633-6626  
FAX (562) 633-2082

PACKING SLIP

Original : 33373

\*\*\* Parts Manufactured in the USA \*\*\*

Sold To:

003635  
B/E AEROSPACE CONSUMABLE MANAGEMENT  
P.O. BOX 025263  
MIAMI, FLA 33102-5263

Ship To:

\*\*\*\*\*  
B/E AEROSPACE CONSUMABLE MANAGEMENT  
9835 NW 14TH ST.  
MIAMI, FLA 33172

Customer P.O. No.		Sales Order	Date	Ship Via		Job No.
0JPL49		50627	06-06-13	FED EX GROUND/WATKIN		325586
Pos	Item	Ordered	Delivered Qty	Unit	Weight	No. of Cartons
*****						
10	AN3-35A	15000	15000	ea	480	15

B/E Aerospace, Inc. - Consumables Management  
Self Release  
Signature and Stamp: *Marcos Tiner*  
Date: JUN 10 2013



**CALIFORNIA SCREW PRODUCTS CORP.**

14957 GWENCHRIS COURT

PARAMOUNT, CALIF. 90723-3423

CAGE NUMBER : 82507  
Airbus UK Approval No. AUK/SA/30144Job Number : 325586  
BAE/AG/30235 / NAA**TEST REPORT**Part Number : AN3-35A  
Customer : B/E AEROSPACE CONSUMABLE MANAGEMENT  
Procurement Spec. : NASM6812 REV. 3  
Surface Finish Spec : AMS-QQ-P-416 REV. C  
Heat Treat Spec : AMS2759/1 REV. E  
Mgntc Permeability : N/APart Standard : NASM3-20 REV. 2  
Cust. Purchase Order Number : 0JPL49  
Thread Size & Form : .190-32 UNF-3A  
Thread Spec : MIL-S-7742 REV. D  
Sample Size Spec. : NASM6812 REV. 3Shipped Quantity\*: 15000  
Mfg Quantity: 16000  
Matl Spec: AMS 6322 REV. N  
Item Description: Bolt  
Heat Number: 10189931

\* Actual piece count is within +/- 2% of the shown lot quantity.

**NON-DESTRUCTIVE TESTS / SUBCONTRACTED (SEE CERTIFICATION)**Sample Size : 0 specimens Inspection Results: Accept : 0 Reject : 0 specimens  
Magnetic Particle : N/A Fluorescent Penet. : N/A**METALLURGICAL EXAMINATION RESULTS**Sample Size : 5 specimens Accept : 5 Reject : 0 Lab Mount No. : 43870  
GRAIN SIZE : N/A HEAD STRUCTURE : Accept LAPS : Accept MICRO STRUCTURE : Accept  
FILLET COLD WORKED : Accept DECARB : Accept SEAMS : Accept CARBURIZED : Accept  
GRAIN FLOW HEAD : Accept GRAIN FLOW THREAD : Accept CRACKS : Accept THREAD RUN OUT : Accept**MECHANICAL TESTS RESULTS**ULTIMATE TENSILE STRENGTH (lbs.) - Loc. of Failure: Threads Minimum Req.: 2210  
Sample Size : 5 specimens Accept : 5 Reject : 0 Maximum Req.: 0

1. 2927	2. 2970	3. 2998	4. 2988	5. 3016	6. N/A	7. N/A	8. N/A
9. N/A	10. N/A	11. N/A	12. N/A	13. N/A	14. N/A	15. N/A	16. N/A
17. N/A	18. N/A	19. N/A	20. N/A	21. N/A	22. N/A	23. N/A	24. N/A
25. N/A	26. N/A	27. N/A	28. N/A	29. N/A	30. N/A	31. N/A	32. N/A

SHEAR (lbs.) S/D : SINGLE Sample Size : 5 specimens Accept : 5 Reject : 0 Minimum Req.: 2125

1. 2603	2. 2580	3. 2703	4. 2610	5. 2523	6. N/A	7. N/A	8. N/A
9. N/A	10. N/A	11. N/A	12. N/A	13. N/A	14. N/A	15. N/A	16. N/A
17. N/A	18. N/A	19. N/A	20. N/A	21. N/A	22. N/A	23. N/A	24. N/A
25. N/A	26. N/A	27. N/A	28. N/A	29. N/A	30. N/A	31. N/A	32. N/A

HARDNESS TEST - Sample Size : 5 Hardness Req. RC : 26-32 Hardness Results : 27-29

STRESS RUPTURE TEST - N/A Load (Lbs.) : 0 Temperature (F) : 0 Periodic test, REF Job No.  
Sample Size : 0 Hours : 0FATIGUE TEST - N/A Cycles : 0 Min Req. : 0  
Sample Size : 0 Low Load (lbs.) : 0 High Load (lbs.) : 0

TORQUE TEST - N/A Sample Size : 0 Load (Lbs/in) : 0

**DFAR 252.225.7009  
COMPLIANCE**

STRESS DURABILITY TEST - N/A Sample Size : 0 LOAD (Lbs.) : 0 Hours : 0

**STATEMENT OF CONFORMANCE:**

This report relates only to items inspected/tested. Deviations from standard test methods, if any, are noted, and results from subcontracted inspection or testing, if any, are identified. All items were manufactured in the USA under a quality management system, which complies with ISO 9001 and with AS 9100. CALIFORNIA SCREW PRODUCTS CORP, hereby states: That the above product is mercury free; that the above listed lot has been produced, sampled, tested, inspected and marked in accordance with all requirements and that the product complies with all specification and contract requirements; that evidence of which is in the files of our company subject to examination. This report shall not be reproduced except in full unless authorize in writing by CALIFORNIA SCREW PRODUCTS CORPORATION.

**MARIAELENA  
TORRES**

B/E Aerospace, Inc. - Consumables Management

**Self Release**Signature and Stamp: *Maria Elena Torres*

Date: \_\_\_\_\_

FINAL INSPECTOR

(Name, Signature, Stamp and Date)

Date: 20 2013



**WireTech, Inc.**

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

Cal Screw Products  
14957 Gwenchris Ct.  
Paramount, CA 90723  
USA

WORK ORDER/  
092620

# CERTIFICATION

HEAT NO. /  
10189931/  
SALES ORDER / RLS  
845382 / 1  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

J/N325586

CUSTOMER P.O. 121410	CUSTOMER PART H1070	QUANTITY 2,236 Lbs	CARRIERS 2	LADING NO 00098595	SHIPMENT DATE 08/01/2012			
SPECIFICATION, C048740-101855A A-8740, AQ, SKFG, CHO/WIRE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.185/0.186 Specifications: AMS 2301K, AMS6322N, MIL-S-6049A, AMEND. 1, H1070/AMS-S-6049-A								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C .39	Si .27	Mn .88	P .012	S .005	Cu .09	Ni .42	Cr .53	Mo .21
Physical Properties								
Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source	
6 J5=54	J8=47	J10=44	S2-R1-C2	GOOD	F&S=0	Charter		
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	Results						
Tensile Strength	KSI	86.6						
Yield Strength	KSI	73.6						
% Elongation	%	24						
% Reduction of Area	%	75.0						
Rockwell Hardness B Scale	HRB (s)	89						

8830

JOSE ARVANTES

AUG 12 2012

DFAR 252.225.7009 COMPLIANCE

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. \*Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

Material is free of mercury, radium, or alpha contamination.

"LATEST REVISIONS OF ASTM"

3/11325586

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G056	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

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  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



8830  
JOSE CERVANTES  
AUG 02 2012

DFAR 252.225.7009  
COMPLIANCE

# Southwest Plating Company, LLC

1344 W. Slauson Ave.  
Los Angeles, CA 90044-2824  
Telephone (323) 753 - 3781  
Fax (323) 753 - 9472

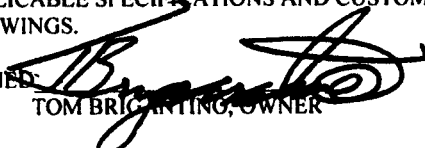
## CERTIFICATION

DATE	INVOICE #
5/31/2013	130694

<b>BILL TO</b>
CA Screw Products Corp P.O. Box 228 Paramount, Ca. 90723

<b>SHIP TO</b>
CA Screw Products Corp 14957 Gwen Chris Ave. Paramount, Ca. 90723

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.	PROJECT
130427	Net 30		5/31/2013			

QUANTITY	ITEM CODE	DESCRIPTION	PRICE EACH	AMOUNT
	# OF PIECES	16000	0.00	0.00
	PART NUMBER	AN3-35A REV.N/A NASM3-20 REV.2	0.00	0.00
	PANS	11	0.00	0.00
	JOB NUMBER	325586	0.00	0.00
	POUNDS	515	0.00	0.00
	MATERIAL	8740	0.00	0.00
	THICKNESS	.00032-.00047	0.00	0.00
	41	CAD PLATE TYPE 11 CL 2 PER AMS-QQ-P-416C	0.00	0.00
		.190-32 UNF-3A R/C 27-32 A/P .189-.186		
	CERT	WE HEREBY CERTIFY THAT THE PROCESSING AND INSPECTION PERFORMED ON PARTS BY THIS PURCHASE ORDER ARE IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS AND CUSTOMER DRAWINGS.	0.00	0.00
	SIGN I	SIGNED  TOM BRICKING, OWNER	0.00	0.00
		DATE 5/31/2013		

Claims must be made within 5 days of receipt of goods. No returns accepted without our approval.

**Total** \$0.00



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

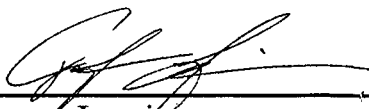
### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
8	50	EA	AN6-35A		13146	AIRFASCO INDUSTRIES	32958		

  
Jason Lewis  
Vice President of Quality

02/20/14



# Airfasco Industries, Inc.

2655 Harrison Ave SW  
Canton, OH 44706  
Ph: 330-430-6190, Fax: 330-430-6199,

## Packing Slip

Original

Invoice #: 111847

Invoice Date: 1/20/2009

Time: 1:40:12 PM

Page: 1

### To:

M&M AEROSPACE HARDWARE  
PO BOX 025263  
MIAMI, FL 33102  
USA  
Ph: 305-592-5155 Fax: 305-591-8357 PURCHAS

### Ship To:

M&M AEROSPACE HARDWARE  
10000 NW 15TH TERRACE  
MIAMI, FL 33172

Cust. PO#: 0FJ998

Order Date: 6/9/2008

Prepared By:

Customer #: 12726

Buyer: JOE GRAY

Terms: NET 60

# of Items: 1

Sales Order: 90325

VAT #:

FOB:

Ship Via: FEDEX GROUND COShip Via Acc: 0331-0149-0

# of Boxes: 153

Ship Log #: 1

Cust VAT #:

AWB:

Weight: 7265

Ship Order:

Ship Date: 1/20/2009

Shipment:

Item	Part Number/Description	Shipped	BackOrd	CD		Unit Price	UOM	Total Amt
1	AN6-35A BOLT, AN Loc/Whse: Control #: 138565-1 L-13146 TEST REPORT L-13146	2500	0	NE			EA	

C OF C ENCLOSED  
153 BOXES 1271,1111,1314,1353,988,1228 LBS  
6 PALLETS  
PARTS MADE IN USA  
THANK YOU!



**AIRFASCO**  
**INDUSTRIES**  
MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW  
CANTON, OH 44706  
PHONE: (330)430-6190  
FAX: (330)430-6199

## CERTIFICATE OF CONFORMANCE

### M&M AEROSPACE HARDWARE

I hereby certify that on 1/19/2009 AIRFASCO Industries provided the supplies called for by Contract/ PO Number 0FJ998 in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States.

  
WM. DENT

Quality Assurance Representative

PART NUMBER	LOT NUMBER	QUANTITY	PART NUMBER	LOT NUMBER	QUANTITY
AN6-35A	13146	2500			

CIF3-0



# AIRFASCO

## INDUSTRIES

MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW  
CANTON, OH 44706  
PHONE: (330)430-6190  
FAX: (330)430-6199

### PHYSICAL AND CHEMICAL CERTIFICATION

DATE MFG.: 01/15/09

PART NO.: AN6-35A per NASM6-35A rev. 1

AFC LOT NO.: 13146

QTY MFG.: 16,664

PROCUREMENT SPECIFICATION: Produced per NASM 6812 Rev. 2

### HEAT TREAT

VENDOR: Brite Metal

CERTIFICATION NO.: B-141648

PROCUREMENT SPECIFICATION: Heat Treat per MIL-H-6875 H

### PLATING

VENDOR: Beringer Plating

CERTIFICATION NO.: 52467

PROCUREMENT SPECIFICATION: Cadmium Plate per AMS QQ-P-416B, Type II, Class 2

### MATERIAL

MILL: Ivaco

COUNTRY OF MELT: Canada

HEAT: W95376

GRADE SPECIFICATION: Alloy Steel per AMS 6300 C, Type 4037, .390"

4037 MATERIAL CHEMISTRY											
ELEMENT-ID.	-C-	-MN-	-P-	-S-	-SI-	-NI-	-CR-	-MO-	-CU-	Other	Other
LADLE	.380	.800	.009	.004	.190	.080	.090	.240	.040		

PHYSICAL PROPERTIES				
PHYSICAL	TENSILE	YIELD	SHEAR	HARDNESS
REQUIRED	10,100 lbs.	7,740 lbs.	8,280 lbs.	HRC 26-32
ACTUAL	13,221 lbs.	12,501 lbs.	8,847 lbs.	HRC 28.5-30

Non-Destructive Magnetic Particle per ASTM-E-1444-05

We hereby certify that the above data is correct and that the fasteners have been manufactured and inspected in accordance with Airfasco Industries quality requirements.

Airfasco Industries

Quality Assurance Representative:

  
Wm. Dent



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
5	50	EA	MS21044-N08		39995-000	MACLEAN-ESNA	019L2		

  
Jason Lewis  
Vice President of Quality

02/20/14

MACLEAN-ESNA  
PICK IN PACKING LIST

5/331

Ship From: MacLean ESNA  
611 Country Club Road  
Pocahontas, AR 72455

Col/Fpd: 01 COLLECT  
Routing: 01 Not on file

Sold to: 552550  
BE AEROSPACE INC  
PO BOX 025263  
MIAMI, FL 33102-5263

Ship To: 552550-0000  
M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

Customer P.O.: OHJ057

Order No: 055028-00 BA: 05  
Tkn By: SEH Chgd By: SEH

Ord. Qty.	Item Number	LOCN							
No. Ctns	Description	TAG				Qty.	No. of	Net	
Ship Qty.		HT/LOT	QOH	Picked	Cartons	Weight			
500000	175746	0010 04/01/10	✓A50A	15096	15096	2	59*		
500,000	50 F22NM-82		0						
	MS21044N08		1770-000						
CTN QTY:	10000 Cus Pt: MS21044N08								
			✓C31A	9925	9925	1	39*		
			11765						
			1770-000						
			✓M36B	9950	9950	1	39*		
			11548						
			38489-000						
			✓B35A	225000	225000	23	900*		
			11204						
			39810-000						
			✓B36A	202537	202537	24	811*		
			11205						
			39810-000						
			✓C30B	37492	37492	4	152*		
			11210						
			39995-000						

\*\*\*\*\* CERTS REQUIRED \*\*\*\*\*  
REL NBR V-099325

2 SKIDS 2065\*  
52 BXS

Order Total:

\*\*\*\*\* ORDER COMMENTS \*\*\*\*\*

QTY TOLERANCE +/-2%  
UNDER 150# FEDEX GROUND 0331-0149-0 MARK COLLECT  
OVER 150# FEDEX NATIONAL LTL 018757  
DO NOT INSURE  
F.O.B. POCAHONTAS, AR  
ALL ITEMS MUST BE NEW AND TO LATEST  
REVISION

\*\*\* Continued On The Next Page \*\*\*

3/22/10  
B

RECEIVED  
MAY 11 2010

MACLEANESNA  
P. T. C. K. I. N. O. L. I. S. T.

Strip ~~Figure~~ MacLean ESNA

1911 Country Club Road  
Pocahontas, AR 72455

Col/Fpd# 01 COLLECT  
Routing# 01 Not on file

066255 107 p105

2,000 RE AEROSPACE INC

FD RDX 025263

MIAMI, FL 33102-5263

Ship To: 552550-0000  
M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

August 1957 P. 0.2 0-17057

Order No: 055028-00 B/O: 05

HHS #A p403 HHS #A4 4011

Ord.	Qty.	Item Number	Description
006	100	100	100

2007

Table 1

0.19

of

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Line From Date

44-38861-107

1403

**Predicted**

Cal 1-183

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MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
611 COUNTRY CLUB ROAD  
POCAHONTAS, ARKANSAS 72455  
(870) 892-5201

TO: M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

DATE: 3/23/2010

SUBJECT:	YOUR ORDER NUMBER	OHJ057	ITEM NUMBER	1
	ESNA ORDER NUMBER	055028		
	FSCM/ CAGE NUMBER	019L2		
	YOUR PART NUMBER	MS21044N08		
	CERTIFIED AS	MS21044N08 PER NASM21044 (NEW)		
	ESNA PART NUMBER	F22NM-82		
	QUANTITY	37492		
	PACKING LIST NUMBER	51331		
	SHOP ORDER NUMBER	39995 - 000		

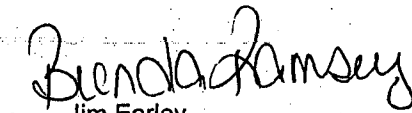
Gentlemen:

This is to certify that all applicable plating, heat treating, and inspection processing and that all material used in the manufacture of subject parts conform to the specification or drawings received by ESNA and set forth in the subject purchase order; that the parts are of good material and workmanship; and that all necessary records, including chemical and physical where applicable, will be made available for review upon request. The inspection and test reports provided represent the actual attributes of the items furnished on this contract and indicate full compliance with all applicable specification and contract requirements.

This is to certify that the materials supplied against the subject order are free of contamination by presence of mercury.

Very truly yours,

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY

  
Jim Earley  
Quality Assurance Manager

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
POCAHONTAS, ARKANSAS 72455

CERTIFICATE OF QUALITY COMPLIANCE

DATE: 3/23/2010

TO: M&M AEROSPACE HARDWARE  
10000 N.W. 15 TERRACE  
MIAMI, FL 33172

ESNA PART NO. F22NM-82  
MANUFACTURER'S LOT SIZE 77064 (APPROX. WT. COUNT)  
MANUFACTURED UNDER SHOP ORDER NUMBER 39995 - 000  
ORIGINATED AS SHOP ORDER NUMBER

ACCEPTANCE TESTS PER NASM 25027

**MATERIAL** RAW MATERIAL TYPE 0.310 RD 1010 CHQ WIRE DATE MFG: 08-08  
RAW MATERIAL CONFORMS TO ASTM A-510 AS EVIDENCED BY THE ATTACHED MILL CERTIFICATION. ESNA SHOP  
ORDER NO. 39995 - 000 MILL HEAT NO. 527730 VENDOR WIRE TECH  
RED NYLON IS A TRADEMARK OF ELASTIC STOP NUT. THIS ASSURES TRACEABILITY OF PARTS TO SOURCE. MATERIAL  
CERTIFICATION WITH HEAT NUMBERS ASSURES TRACEABILITY TO VENDOR OF RAW MATERIAL. NONMETALLIC INSERT  
CONFORMS TO ASTM D4066-00. (ZYTEL 103)

**FINISH** FINISH TYPE CADMIUM PLATED TO SAE AMS QQ-P-416B, TY II, CL 2  
LUBRICANT TYPE NO ADDITIONAL LUBRICANT

**AXIAL STRENGTH** REQUIRED LBS. MINIMUM 1720 ALL SAMPLE PIECES TESTED MEET OR EXCEED  
EXCEEDS LBS. 2100 MINIMUM REQUIREMENTS.  
SAMPLE SIZE 15 PIECES.

**WORKMANSHIP** CONFORMS DIMENSIONALLY TO MS21044N08 PER NASM21044 (NEW)  
STANDARD. BEARING SURFACE SQUARENESS AS SPECIFIED PER NASM 25027

DISCONTINUITIES

WITHIN LIMITS PER NASM 25027 AND MIL-STD-271D/ACN 1/ AND REV E/ NOTICE 2/ AND REV F/ NOTICE 1.

ASTM E1444 -- MT PER SPEC 725	SAMPLE SIZE( MT - PCS):	0
	ACCEPTED(PCS):	N/A
ASTM E1417 -- PT PER SPEC 731	SAMPLE SIZE( PT - PCS):	0
	ACCEPTED(PCS):	N/A

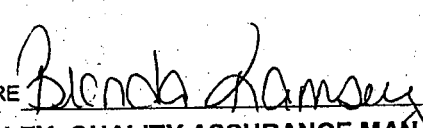
**LOCKING TORQUE** MAXIMUM LOCKING(IN. LBS.): 15  
MINIMUM BREAKAWAY(IN. LBS.): 1.5  
1ST CYCLE MAXIMUM LOCKING(IN. LBS.): 3.5  
7TH CYCLE MAXIMUM LOCKING(IN. LBS.): 3.9  
15TH CYCLE MAXIMUM LOCKING(IN. LBS.): 3.5  
15TH MINIMUM BREAKAWAY(IN. LBS.): 2.1  
ALL SAMPLE PIECES MEET  
OR EXCEED MINIMUM REQTS.  
SAMPLE SIZE 15 PIECES

MERCURY FREE CLAUSE

WE CERTIFY THAT NO POSSIBILITY EXISTS FOR MERCURY CONTAMINATION TO OCCUR  
DURING MANUFACTURE, ASSEMBLY, OR TESTING OF PARTS ON THIS CONTRACT.

I CERTIFY THAT THE ABOVE TEST RESULTS AND/OR STATEMENTS ARE CORRECT AND REPRESENT THE PRODUCTS AS SUPPLIED.

FSCM/CAGE NO. 019L2  
COQC-NASM REV. 7-9-09

SIGNATURE   
JIM EARLEY, QUALITY ASSURANCE MANAGER



The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSMD	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSR/D/CDPD	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	P4	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSC	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
358.05	128003	CSDT	Charter Steel Detroit	23860 Sherwood Ave. Center Line, MI 48015
*	*	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSMD, CSC	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSC	ASTM E572
Macroetch	CSMD, CSC	ASTM E381
Hardenability (Jominy)	CSMD, CSC	ASTM A255; SAE J406; JIS G0561
Grain Size	CSMD	ASTM E112
Tensile Test	CSR/D/CSPD, P4, CSC, CSDT	ASTM E8; ASTM A370
Rockwell Hardness	CSMD, CSR/D/CSPD, P4, CSC, CSDT	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSR/D/CSPD, P4	ASTM A892
Inclusion Content (Methods A, E)	CSR/D/CSPD, CSC	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/09.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Purchase Order number) to the customer's purchase order. Both Purchase Order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.

39995-000



ESNA 9



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: P023060**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MPR DATE	EXP DATE
3	3000	EA	MS2104214		43474-000	MACLEAN-ESNA	019L2		

  
Jason Lewis

Vice President of Quality

02/20/14

\*\* Packing Slip \*\* Page  
.. . . . 1

Date  
7/02/13  
10:23  
Ship#: 062503

Sold BE AEROSPACE INC  
To PO BOX 025263  
MIAMI, FL 33102-5263

Ship B/E AEROSPACE  
To 9835 NW 14TH ST  
MIAMI, FL 33172

```
=====
Order  Order  Cust  Loc Sls  P.O.  Job  Ship Via  Col
No.    date   No.    rep  No.   No.                   Ppd
-----
072226 1/20/12 552550 29 999                      Not on file  COLLECT
                                      OFEW58                      Collect
=====
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=====
Order Qty B/O Item Number / Level  UM  Need  Summ  Item
qty ship qty description          Date   Qty   Loc
=====
380891 218218 056054 MS21042L4 EA ( 7/01/13) 29-Loc
562673 MS2LF3324-4
=====
```

\*\*\*\*\*  
\* CERTS REQUIRED \*  
\*\*\*\*\*  
Cert Type 01  
\*\*\*\*\*  
\* DFAR 252.225.7014 REQUIRED \*  
\*\*\*\*\*  
\*\*\* EXACT QTY \*\*\*

A50A DFAR 44452-000 441,973  
M39D 13821 43474-000DFAR 120,700

\*\*\*\*\* ORDER COMMENTS \*\*\*\*\*  
QTY TOLERANCE +/-2%  
UNDER 150# FEDEX GROUND  
0331-0149-0 MARK COLLECT  
OVER 150# FEDEX NATIONAL LTL  
018757  
STANDARD FRT TERMS: EXW  
ALL ITEMS MUST BE NEW AND TO LATEST  
REVISION  
"DO NOT COVER ESNA PRODUCT LABEL"

\*\*\* Shipment Summary: 57 Cartons 0 Pallets 1,805.00 Weight

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
POCAHONTAS, ARKANSAS 72455

CERTIFICATE OF QUALITY COMPLIANCE

DATE: 7/2/2013

TO: B/E AEROSPACE  
9835 NW 14TH ST  
MIAMI, FL 33172

ESNA PART NO. M52LF3324-4  
MANUFACTURER'S LOT SIZE 306848 (APPROX. WT. COUNT)  
MANUFACTURED UNDER SHOP ORDER NUMBER 43474 - 000  
ORIGINATED AS SHOP ORDER NUMBER  
CUSTOMER PO #: OFEW58 PACKING LIST #: 62503  
ESNA ORDER #: 072226 QTY PACKAGED: 120700  
CUSTOMER PART #: MS21042L4

ACCEPTANCE TESTS PER NASM 25027

MATERIAL RAW MATERIAL TYPE .281 4037 WIRE DATE MFG: 11/29/12  
RAW MATERIAL CONFORMS TO AMS 6300E AS EVIDENCED BY THE ATTACHED MILL CERTIFICATION. ESNA SHOP  
ORDER NO. 43474 - 000 MILL HEAT NO. 10194500 VENDOR WIRE TECH

FINISH FINISH TYPE CAD. PLATE TO SAE AMS QQ-P-416B, TY II, CL 2  
LUBRICANT TYPE EVERLUB 620C DRY FILM LUBE PER AS5272 TYPE I

ACCEPTED 23 HR STRESS EMBRITTLEMENT LOADED TO 129 IN LBS. MIN.

AXIAL STRENGTH REQUIRED LBS. MINIMUM 6470 ALL SAMPLE PIECES TESTED MEET OR EXCEED  
EXCEEDS LBS. 6500 MINIMUM REQUIREMENTS.

SAMPLE SIZE 27 PIECES.

HARDNESS REQUIREMENT HRC 43-46 IS HRC 43-44

WORKMANSHIP CONFORMS DIMENSIONALLY TO MS21042L4 PER NASM21042 (NEW) STANDARD.  
BEARING SURFACE SQUARENESS AS SPECIFIED PER NASM 25027

DISCONTINUITIES

WITHIN LIMITS PER NASM 25027

AND-MIL-STD-271D/ACN 1/ AND REV E/ NOTICE 2/ AND REV F/ NOTICE 1.

ASTM E1444

MT PER SPEC 725 X

SAMPLE SIZE( MT - PCS): 32

ACCEPTED(PCS): 32

PT PER SPEC 731

SAMPLE SIZE( PT - PCS): 0

ACCEPTED(PCS): N/A

This is to certify that all applicable plating, heat treating, and inspection processing and that all material used in the manufacture of subject parts conform to the specification or drawings received by ESNA and set forth in the subject purchase order; that the parts are of good material and workmanship; and that all necessary records, including chemical and physical where applicable, will be made available for review upon request. The inspection and test reports provided represent the actual attributes of the items furnished on this contract and indicate full compliance with all applicable specification and contract requirements.

This is to certify that the materials supplied against the subject order are free of contamination by presence of mercury.

SIGNATURE

DONNIE AUTRY, QUALITY ASSURANCE MANAGER

Brenda Ramsey, Quality Inspector

FSCM/CAGE NO. 019L2

QAF68 REV. 01-14-13

MACLEAN-ESNA  
A MACLEAN-FOGG COMPANY  
POCAHONTAS, ARKANSAS 72455

LOCKING TORQUE TEST

CUSTOMER NAME B/E AEROSPACE  
9835 NW 14TH ST  
MIAMI, FL 33172

CUSTOMER DUE DATE

7/2/2013

CUSTOMER PO # OFEW58  
ITEM NUMBER 056054  
QUANTITY 120700  
THREAD SIZE .2500-28 UNJF-3B  
HEX .306-.314  
LINE NO 1  
MS NUMBER - REF: MS21042L4 PER NASM21042 (NEW)

ESNA ORDER # 072226  
PART # M52LF3324-4  
SHOP ORDER # 43474 - 000  
LOT QUANTITY 306848  
PARENT SHOP ORDER #

Sample Size & Requirements per Spec NASM 25027

SampleSz 27

REQUIREMENT: 1ST, 7TH, 15TH, INSTALLATION MAXIMUM TORQUE

30

15TH BREAKAWAY MINIMUM TORQUE

3.5

SAMPLE #	1ST ON	1ST BREAK	7TH ON	7TH BREAK	15TH ON	15TH BREAK
1	20	18	14	12	07	06
2	22	20	13	10	08	07
3	20	16	14	12	08	07
4	18	20	14	12	07	06
5	22	20	15	13	08	05
6	20	20	14	12	10	07
7	22	20	15	13	08	06
8	18	16	14	12	10	08
9	20	20	15	12	08	07
10	22	20	16	15	12	10
11	20	18	14	12	08	07
12	20	17	13	10	08	07
13	24	20	16	12	08	06
14	20	18	14	12	08	06
15	22	20	16	14	10	08
16	22	20	15	12	07	05
17	24	19	15	14	08	06
18	26	22	18	16	12	09
19	24	22	16	14	10	07
20	22	20	15	16	10	08
21	18	16	12	10	06	05
22	20	18	14	12	08	07
23	22	18	12	10	08	08
24	20	16	12	10	07	06
25	22	20	16	12	08	06
26	20	18	14	12	07	05
27	20	18	14	12	06	05

SIGNATURE

  
DONNIE AUTRY, QUALITY ASSURANCE MANAGER  
Brenda Ramsey, Quality Inspector



**WireTech, Inc.**

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

Maclean - ESNA  
611 Country Club Road  
Pocahontas, AR 72455  
USA

WORK ORDER  
**095338**

**CERTIFICATION**  
HEAT NO.  
10194500  
SALES ORDER / RLS  
847123 / 1  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

2m1R 28155  
PO 24119  
281 4037

CUSTOMER P.O. <b>24119-00</b>	CUSTOMER PART <b>0420070281</b>	QUANTITY <b>1,769 Lbs</b>	CARRIERS <b>1</b>	LADING NO <b>00100860</b>	SHIPMENT DATE <b>11/29/2012</b>
SPECIFICATION <b>M054037-102810A</b> <b>A-4037, AQ, SKFG, CHQ WIRE, SEAM &amp; DECARB FREE, SAIP Zinc Phosphate, Lime &amp; Stearate Coating,</b> <b>Size:0.280/0.282 Specifications: AMS 6300 E, 1042C</b>					
CERTIFICATION REQUIREMENTS					
Chemical Properties					
C .37	Si .21	Mn .76	P .01	S .012	Cu .09
					Ni .06
					Cr .17
					Mo .20
Physical Properties					
Grain Size Jominy 1 6 J1=55	Jominy 2 J2=54	Inclusions Macro S2-R1-C2	Cleanliness GOOD	Mill Source F&S=0	Charter
Country of Origin USA - DFAR Compliant					
Mechanical Properties					
TEST	UNITS				Results
Tensile Strength	KSI				72.4
Yield Strength	KSI				61.6
% Elongation	%				28.5
% Reduction of Area	%				72.6
Rockwell Hardness B Scale	HRB (s)				80
Decarb (Total)	In				0.00

**43474-000**

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140.

The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. \*Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

Material is free of mercury, radium, or alpha contamination.

LATEST REVISIONS OF ASTM



# CHARTER STEEL

A Division of  
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road  
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

## CHARTER STEEL TEST REPORT Reverse Has Text And Codes

Wiretech Incorporated  
6440 East Canning Street  
Attn: Andre Stephan  
Los Angeles, CA-90040

Cust P.O.	6865-1
Customer Part #	4037C1A090-C
Charter Sales Order	70032662
Heat #	10194500
Ship Lot #	4152067
Grade	4037 R SK FG AQ 23/64
Process	HRSA
Finish Size	23/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

### Test Results of Heat Lot# 10194500

Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM	.37	.76	.010	.012	.21	.06	.17	.20	.09	.008	.001
%Wt	AL	N	B	TI	NB						
	.024	.0060	.0001	.000	.001						
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	S5	S4	S0	41	34	29	28	27	26	24	22
	JOM14	JOM16	JOM18								
	21	20	20								

JOMINY SAMPLE TYPE ENGLISH = C  
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1  
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00  
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00  
CHEM. DEVIATION EXT.-GREEN =

### Test Results of Rolling Lot# 1071912

REDUCTION RATIO = 299:1

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2.0	74.6	75.9	75.2	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	67	71	69	RA LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .004  
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 87.5

### Specifications:

Manufactured per Charter Steel Quality Manual Rev 9.08-01-09  
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:  
Customer Document = AMS 6300F / AMS 2301K / COP 3010M Revision = Dated =

### Additional Comments:

AMIR 28155  
PO 24119  
281 4037

43474-000

Charter Steel  
Saukville, WI, USA



Page 1 of 1

This MTR supersedes all previously dated MTRs for this order

Janice Barnard  
Manager of Quality Assurance  
07/10/2012

Rem: Load1, Fax0, Mail0

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G056	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.

**43474-000**

Amir 28155  
PO 24119  
281 4037







# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.becorconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: P023060**

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
6	200	EA	MS21059L3		85111E2	ITW CIP	55H08		

  
Jason Lewis  
Vice President of Quality

02/20/14

# Honeywell

HCS ROANOKE MAIN  
CONSUMABLES SOLUTIONS  
700 HENRIETTA CREEK RD  
ROANOKE TX 76262

REFERENCE NO. 1802 **5558**

PAGE 1



CUSTOMER CODE 13001

S M & M AEROSPACE HARDWARE, INC.  
O ATTN: NATACHA PIERRE  
D P O BOX 025263  
T MIAMI FL 33102-5263  
O

S M & M AEROSPACE HARDWARE, INC.  
H 10000 NW 15TH TERRACE  
I MIAMI FL 33172  
P  
T  
O



PURCHASE ORDER NO. 0HE709

CUSTOMER RELEASE NO.

SALES ORDER NO. **6933434**

PACKED BY	WEIGHT	NO. CTNS.	SHIP VIA	WAYBILL	F.O.B.
	.000		Std Ground	FTW219399	ORIGIN
DATE SHIPPED 2/24/09	SKU/Cart #				
QUANTITY				PART NUMBER / DESCRIPTION	
QTY.DUE	BACK ORDERED	SHIPPED	U/M	Manufacturer Lot#	CS Lot#
150000	0	150000	EA	MS21059L3 NUT, SELF-LOCKING, PLATE QTY: 6216 85111E3	0812005981
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E3	0812005982
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E3	0812005983
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E2	0812007233
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E2	0812007239
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E2	0812007240
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E2	0812007241
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	
				QTY: 7500 85111E2	0812007242
Continued					

## RETURNS

THE MANUFACTURER OF THE ARTICLES COVERED BY THIS INVOICE HAS CERTIFIED TO US THAT SUCH ARTICLES WERE PROCURED, AND WE CERTIFY THAT OUR SERVICES HAVE BEEN RENDERED, IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED.

CUSTOMER ACKNOWLEDGES RECEIPT OF MERCHANDISE ABOVE UNLESS SHORTAGE IS REPORTED IN 10 DAYS. WRITTEN AUTHORIZATION MUST BE SECURED FOR ANY MERCHANDISE RETURNED.

## CERTIFICATION

WE CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER CONFORMS IN ALL RESPECTS TO APPLICABLE BLUEPRINTS AND SPECIFICATIONS. EVIDENCE OF SUCH IS ON FILE WITH US OR OUR SUPPLIERS SUBJECT TO EXAMINATION.

# Honeywell

HCS ROANOKE MAIN  
CONSUMABLES SOLUTIONS  
700 HENRIETTA CREEK RD  
ROANOKE TX 76262

REFERENCE NO. 1802 **5558**

PAGE 2



CUSTOMER CODE 13001

S M & M AEROSPACE HARDWARE, INC.  
O ATTN: NATACHA PIERRE  
D P O BOX 025263  
T MIAMI FL 33102-5263  
O

S M & M AEROSPACE HARDWARE, INC.  
H 10000 NW 15TH TERRACE  
I MIAMI FL 33172  
P  
T  
O



PURCHASE ORDER NO. OHE709

CUSTOMER RELEASE NO.

**6933434**

PACKED BY	WEIGHT .000	NO. CTNS.	SHIP VIA Std Ground	WAYBILL FTW219399	SALES ORDER NO. F.O.B. ORIGIN	
DATE SHIPPED 2/24/09		SKU/Cart #				
QUANTITY				PART NUMBER / DESCRIPTION	Manufacturer Lot#	CS Lot#
QTY.DUE	BACK ORDERED	SHIPPED	U/M			
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007243
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007244
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007245
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007246
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007247
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007248
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007249
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1		
Continued						

## RETURNS

THE MANUFACTURER OF THE ARTICLES COVERED BY THIS INVOICE HAS CERTIFIED TO US THAT SUCH ARTICLES WERE PROCURED, AND WE CERTIFY THAT OUR SERVICES HAVE BEEN RENDERED, IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED.

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# Honeywell

HCS ROANOKE MAIN  
CONSUMABLES SOLUTIONS  
700 HENRIETTA CREEK RD  
ROANOKE TX 76262

REFERENCE NO. 1802 **5558**

PAGE 3



CUSTOMER CODE 13001

S M & M AEROSPACE HARDWARE, INC.  
O ATTN: NATACHA PIERRE  
L P O BOX 025263  
D MIAMI FL 33102-5263  
T  
O

S M & M AEROSPACE HARDWARE, INC.  
H 10000 NW 15TH TERRACE  
I MIAMI FL 33172  
P  
T  
O



PURCHASE ORDER NO. 0HE709

CUSTOMER RELEASE NO.

**6933434**

PACKED BY	WEIGHT .000	NO. CTNS.	SHIP VIA Std Ground	WAYBILL FTW219399	SALES ORDER NO. 0000101 F.O.B. ORIGIN		
DATE SHIPPED 2/24/09		SKU/Cart #					
QUANTITY				PART NUMBER / DESCRIPTION		Manufacturer Lot#	CS Lot#
QTY.DUE	BACK ORDERED	SHIPPED	U/M				
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	QTY: 7500	85111E2	0812007250
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	QTY: 7500	85111E2	0812007251
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	QTY: 7500	85111E2	0812007252
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	QTY: 7500	85111E2	0812007253
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	QTY: 7500	85111E2	0812007254
				MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1	QTY: 1284	85111E2	0812007255
				CONTROL NO.: 18025558			
Shipments over 200 lbs. ship either Watkins Motor DUTY CLASS DESIGNATION: 9801-00-1077. "INVOICES REQ'D INSIDE AND OUTSIDE OF BOX/CARTON"							
Continued							

## RETURNS

THE MANUFACTURER OF THE ARTICLES COVERED BY THIS INVOICE HAS CERTIFIED TO US THAT SUCH ARTICLES WERE PROCURED, AND WE CERTIFY THAT OUR SERVICES HAVE BEEN RENDERED, IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED.

CUSTOMER ACKNOWLEDGES RECEIPT OF MERCHANDISE ABOVE UNLESS SHORTAGE IS REPORTED IN 10 DAYS. WRITTEN AUTHORIZATION MUST BE SECURED FOR ANY MERCHANDISE RETURNED.

## CERTIFICATION

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# Honeywell

HCS ROANOKE MAIN  
CONSUMABLES SOLUTIONS  
700 HENRIETTA CREEK RD  
ROANOKE TX 76262

REFERENCE NO. 1802 **5558**

PAGE 4



CUSTOMER CODE 13001

S M & M AEROSPACE HARDWARE, INC.  
O ATTN: NATACHA PIERRE  
D P O BOX 025263  
T MIAMI FL 33102-5263  
O

S M & M AEROSPACE HARDWARE, INC.  
H 10000 NW 15TH TERRACE  
I MIAMI FL 33172  
P  
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PURCHASE ORDER NO. 0HE709

CUSTOMER RELEASE NO.

SALES ORDER NO. **6933434**

PACKED BY	WEIGHT .000	NO. CTNS.	SHIP VIA Std Ground	WAYBILL FTW219399	F.O.B. ORIGIN
DATE SHIPPED 2/24/09		SKU/Cart #			
QUANTITY				PART NUMBER / DESCRIPTION	
QTY.DUE	BACK ORDERED	SHIPPED	U/M	Manufacturer Lot#	CS Lot#
<p>This request will be processed subject to Buyer being bound by Honeywell Consumables Solutions terms and conditions dated July 17, 2007 and the following guidelines:</p> <ol style="list-style-type: none"><li>1. Quality system compliant with EN/JISQ/AS9120:2002, and AC-00-56. ISO 9001:2000, AS9100:2004</li><li>2. Packaging is in accordance with ATA300 specifications.</li><li>3. Shipments will be made via Honeywell's choice of shipper unless requested otherwise.</li><li>4. Exception may have been taken to certain requirements on your purchase order or request for quotation.</li></ol> <p style="text-align: right;">End of Packing List</p>					

## RETURNS

THE MANUFACTURER OF THE ARTICLES COVERED BY THIS INVOICE HAS CERTIFIED TO US THAT SUCH ARTICLES WERE PROCURED, AND WE CERTIFY THAT OUR SERVICES HAVE BEEN RENDERED, IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED.

CUSTOMER ACKNOWLEDGES RECEIPT OF MERCHANDISE ABOVE UNLESS SHORTAGE IS REPORTED IN 10 DAYS. WRITTEN AUTHORIZATION MUST BE SECURED FOR ANY MERCHANDISE RETURNED.

## CERTIFICATION

WE CERTIFY THAT THE MATERIAL FURNISHED ON THIS ORDER CONFORMS IN ALL RESPECTS TO APPLICABLE BLUEPRINTS AND SPECIFICATIONS. EVIDENCE OF SUCH IS ON FILE WITH US OR OUR SUPPLIERS SUBJECT TO EXAMINATION.





HCS ROANOKE MAIN  
CONSUMABLES SOLUTIONS  
700 HENRIETTA CREEK RD  
ROANOKE TX 76262

REFERENCE NO. 18025558

PAGE 2

SHIPPED DATE: 2/24/09

PURCHASE ORDER NO. 0HE709

## CERTIFICATE OF CONFORMANCE

CUSTOMER CODE 13001

CUSTOMER  
RELEASE NO.

S  
O  
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O  
M & M AEROSPACE HARDWARE, INC.  
ATTN: NATACHA PIERRE  
P O BOX 025263  
MIAMI FL 33102-5263

S  
H  
I  
P  
T  
O  
M & M AEROSPACE HARDWARE, INC.  
10000 NW 15TH TERRACE  
MIAMI FL 33172


SALES ORDER NO. 6933434

ITEM NO.	QUANTITY		PART NUMBER / DESCRIPTION		
	SHIPPED	U/M		Manufacturer Lot#	CS Lot#
			REV LEVEL : 1 MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007245
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007246
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007247
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007248
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007249
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007250
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007251
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007252
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007253
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 QTY: 7500	85111E2	0812007254
			MFG. NAME : ITW CIP (CALIFORNIA IND. PROD)		

Continued

This is to certify that all articles delivered on this order conform to all applicable blueprint and specification requirements. Evidence of such is on file with us and our suppliers subject to examination.

HONEYWELL - CONSUMABLES SOLUTIONS

  
Vice President Of Quality



HCS ROANOKE MAIN  
CONSUMABLES SOLUTIONS  
700 HENRIETTA CREEK RD  
ROANOKE TX 76262

REFERENCE NO. 18025558

PAGE 3

SHIPPED DATE: 2/24/09

PURCHASE ORDER NO. 0HE709

## CERTIFICATE OF CONFORMANCE

CUSTOMER CODE 13001

CUSTOMER  
RELEASE NO.

SOLD TO  
M & M AEROSPACE HARDWARE, INC.  
ATTN: NATACHA PIERRE  
P O BOX 025263  
MIAMI FL 33102-5263

SHIP TO  
M & M AEROSPACE HARDWARE, INC.  
10000 NW 15TH TERRACE  
MIAMI FL 33172

SALES ORDER NO. 6933434

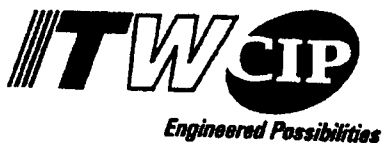
ITEM NO.	QUANTITY		PART NUMBER / DESCRIPTION		
	SHIPPED	U/M		Manufacturer Lot#	CS Lot#
			REV LEVEL : 1 MFG. NAME : ITW CIP (CALIFORNIA IND. PROD) REV LEVEL : 1 CONTROL NO.: 18025558	QTY: 1284 85111E2	0812007255
End of Certificate					

This is to certify that all articles delivered on this order conform to all applicable blueprint and specification requirements. Evidence of such is on file with us and our suppliers subject to examination.

HONEYWELL - CONSUMABLES SOLUTIONS

Vice President Of Quality





**ITW CIP California**  
 11525 South Shoemaker Ave.  
 Santa Fe Springs, Ca. 90670  
 Phone: (562) 941-3281  
 Fax: (562) 941-4967

<b>Customer: Honeywell CS</b> 700 Henrietta Creek Rd. Roanoke, Tx. 76262-6398		<b>Certificate of Conformance</b> Certificate of Conformance certifies that the fasteners in this shipment have been manufactured in accordance with ITW's quality system manual, applicable drawings and specifications, dimensional, mechanical, metallurgical and finish tests were performed and conform to said specifications. Traceability information is maintained and on file by lot number. We certify that this lot was manufactured free from Mercury, Radium, Alpha source contamination and Ozone depleting substances.	
<b>Quantity</b> 322,500	<b>Line#</b> 01		
<b>P.O. #</b> 915625			
<b>Shipper #</b> 699900	CN		
<b>CERTIFIED TO AS9100:2004 / ISO9001:2004</b>			
<b>MADE IN U.S.A.</b>			
<b>ECCN: 9A991.d</b>		<b>Schedule B: 7318.16.0000</b>	
<b>Part #:</b> MS21059L3	<b>Revision:</b> 01	<b>Certification Lot #:</b> 85111E2	<b>HTS: 7318.16.0030</b>
<b>Description:</b> Nut, Self Locking, Plate, Two Lug, Floating		<b>Shipping Label Lot# =</b> 85111E2330	
<b>Procurement Spec:</b> NASM 25027 Rev. New	<b>Nut Heat #:</b> 285094	<b>Grade</b> 1050	<b>Qty Shipped</b>
<b>Material Spec.:</b> AMS-QQ-S-700A	<b>Cage Heat #:</b> 280399		322,500 CN
<b>Raw Mat'l Cert:</b> (See Attached)	<b>Supplier:</b> Calstrip / Nucor		
<b>MECHANICAL TESTING</b>			
<b>ULTIMATE TENSILE STRENGTH POUNDS</b> ( See Attached )	<b>PUSHED OUT POUNDS</b> ( See Attached )	<b>HARDNESS ROCKWELL "C" SCALE</b> ( See Attached )	
<b>STRESS EMBRITTLEMENT</b> ( See Attached )	<b>LOCKING TORQUE</b> ( See Attached )	<b>TORQUE OUT</b> ( See Attached )	
<b>METALLURGICAL TESTING</b>			
<b>Discontinuities:</b> 32	<b>Surface Contamination</b> 32	<b>Grain Flow</b> 32	<b>Microstructure</b> 32
<b>SPECIAL PROCESSES</b>			<b>STAMP</b>
<b>HEAT TREAT:</b> Per Print Specification			
<b>FINISH:</b> CADMIUM PLATE per AMS-QQ-P416 Rev. B, TYPE II CLASS 2 + Dry Film Lubricant Per NASM 25027 Rev. New			
<b>THREADS:</b> .190-32 UNJF-3B ~ Per AS8879 (D)			
<b>NDT:</b> Magnetic Particle Inspection per ASTM E1444-05 (See Attached)			<b>Accepted</b>
		32	<b>Rejected</b>
<b>STAMP</b>		<b>DATE:</b>	
		11/25/08	
<b>AUTHORIZATION QUALITY REPRESENTATIVE:</b> Chris Nagy			



MTR

**ITW - CIP CALIFORNIA**  
11525 SHOEMAKER AVE., SANTA FE SPRINGS, CA 90670  
**CERTIFICATION / TEST REPORT**

Customer Name: Honeywell

Page 1 of 3

Test Report Number: 29 Issue Date: 11/21/08

Part Number: MS21059L3 Rev: 01 ITW/CIP# A10004-017-105

Part Description: Floater Nut and Cage Assembly

Lot Number: 85111E2

Procurement Specification: NASM 25027 Rev. NEW

Inspection Lot Size:

Thread Size: .190-32 UNJF-3B

322,500  
CN  
11/25/08

Accrediting Body: NSF-ISR

Certification Number: 47421-TS3

Expiration Date: 9/12/2010

**CHEMISTRY**

Raw Material Supplier: Calstrip

Raw Material Specification: AMS-QQ-S-700A

Tested by: Atlas Testing

Conforming: **Yes** No

Nut Heat Number: 285094

Lab Report Number: 859453




Cage Heat Number: 280399

Lab Report Number: 452279

Accrediting Body: A2LA

Certification Number: 105.01

Expiration Date: 12/31/2008

Requirement	Results						Test Method * Pass/Fail
Axial Test: 2,460 Min(LB)  27 Pc's	2861	3677	3780				Lab Tech: D.M./C.N.  Results: PASS  Date: 11/23/08
	3757	3522	3721				
	3630	3076	3658				
	3673	3132	3829				
	3362	2972	3026				
	3254	3836	3820				
	3174	3700	3681				
	3122	3061	3882				
	3800	3780	3753				
Push Out: 100 Min (LB)  27 Pc's	331	292	287				Lab Tech: D.M./C.N.  Results: PASS  Date: 11/23/08
	316	308	187				
	272	292	228				
	281	246	292				
	292	289	211				
	283	310	252				
	257	283	289				
	278	294	235				
	295	257	252				
Torque Out: (IN-LB) 60 Min.  27 Pc's	75	79	82				Lab Tech: D.M./C.N.  Results: PASS  Date: 11/23/08
	77	81	99				
	78	82	86				
	75	85	88				
	83	82	81				
	80	76	87				
	84	80	90				
	78	83	82				
	85	85	86				




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6/03/08 F. Romero

Requirement		Results									Test Method * Pass/Fail
Prevailing Torque: (IN-LB)  18.0 Max  2.0 Min.  27 Pc's	1ST ON	BKW	1ST OFF	7TH ON	BKW	7TH OFF	15TH ON	BKW	15TH OFF	Lab Tech: D.M./C.N.  Results:  PASS  Date: 11/23/08	
	11.50	8.50	9.50	9.00	8.25	8.00	7.50	6.25	6.75		
	8.50	8.00	7.75	6.75	6.00	6.50	5.75	4.00	5.00		
	9.50	7.75	8.75	8.50	7.00	8.00	7.25	6.00	6.50		
	8.00	6.75	7.25	6.75	5.50	6.00	5.75	4.50	5.00		
	8.50	8.00	7.75	6.75	6.00	6.50	5.75	4.00	5.00		
	7.75	6.00	7.00	6.75	5.50	6.00	5.25	4.50	5.00		
	15.00	13.75	14.25	14.00	13.00	13.25	12.50	11.00	11.75		
	9.25	8.00	8.75	8.50	7.50	8.00	7.50	6.00	6.75		
	10.00	9.25	9.50	8.75	7.25	8.00	7.50	6.75	7.00		
	7.75	6.00	7.00	6.75	5.50	6.00	5.25	4.50	5.00		
	8.50	8.00	7.75	6.75	6.00	6.50	5.75	4.00	5.00		
	15.25	13.75	14.25	14.00	13.00	13.25	12.50	11.00	11.75		
	8.00	6.75	7.25	6.50	5.50	6.00	5.75	4.50	5.00		
	7.75	6.00	7.00	6.75	5.50	6.00	5.25	4.50	5.00		
	9.25	8.00	8.75	8.50	7.50	8.00	7.50	6.00	6.75		
	8.50	8.00	7.75	6.75	6.00	6.50	5.75	4.00	5.00		
	11.50	8.50	9.50	9.00	8.25	8.00	7.50	6.25	6.75		
	15.50	13.75	14.25	14.00	13.00	13.25	12.50	11.00	11.75		
	8.75	8.00	7.75	6.75	6.00	6.50	5.75	4.00	5.00		
	9.25	8.00	8.75	8.50	7.50	8.00	7.50	6.00	6.75		
	8.00	6.75	7.25	6.75	5.50	6.00	5.75	4.50	5.00		
	7.75	6.00	7.00	6.75	5.50	6.00	5.25	4.50	5.00		
	11.00	8.50	9.50	9.00	8.25	8.00	7.50	6.25	6.75		
	9.25	8.00	8.75	8.50	7.50	8.00	7.50	6.00	6.75		
	8.50	8.00	7.75	6.75	6.00	6.50	5.75	4.00	5.00		
	15.00	13.75	14.25	14.00	13.00	13.25	12.50	11.00	11.75		
	7.75	6.00	7.00	6.75	5.50	6.00	5.25	4.50	5.00		
Hardness (HRC) 49 Max.  15 Pc's	N15	HRC	N15	HRC	N15	HRC				Lab Tech: C.N.  Results:  PASS  Date: 11/23/08	
	82.7	44	83.1	45							
	82.3	43	82.0	43							
	82.5	44	82.1	43							
	83.4	45	83.9	47							
	82.6	44	82.4	43							
	82.9	44	83.6	46							
	82.4	43	83.0	45							
	83.0	45									
Rivet Hole to Rivet Hole:  .688 +/- .002  32 Pc's	.689	.689	.688	.689						Inspector: J.V./C.N.   Results: PASS  Date: 11/21/08	
	.689	.688	.689	.688							
	.688	.689	.689	.688							
	.689	.689	.688	.688							
	.688	.689	.689	.689							
	.688	.689	.688	.688							
	.689	.688	.689	.689							
	.689	.688	.689	.689							
	.689	.688	.689	.689							

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Requirement	Results						Test Method * Pass/Fail
Minor Diameter: .1596-.1675 <u>15 Pc's</u>	.166 .166 .165 .166 .165	.165 .166 .166 .166 .166	.166 .165 .166 .165 .165				Inspector: J.V./C.N. Results: <b>PASS</b> Date: 11/21/08
Thread Gage: .190-32 UNJF-3B <u>32 Pc's</u>							Inspector: J.V./C.N. Results: <b>PASS</b> Date: 11/21/08
Missing Lock Lock Feature and Free Float: <u>100 Pc's</u>							Inspector: J.V./C.N. Results: <b>PASS</b> Date: 11/21/08

### Package to Include:

- ☒ Steel Heat(s) Certification ( Both Certs Nut and Cage )
- ☒ Atlas Test Report(s) (Heat Numbers must match that on Steel Heat Certificates)
- ☒ Copy of Label with all required information
- ☒ Copy of Shipper
- ☒ Copy of Finish Certification Testing
- ☒ Copy of Magnetic Particle Testing
- ☒ Copy of Stress Embrittlement Certificate
- ☒ Copy of Certificate of Conformance

#### \* NOTES:

The results relate to only items tested.

Approved By: Chris Nagy  
PRINT

Signature: Chris Nagy

Title: QA Supervisor

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MTR

6/03/08 F. Romero

# NUCOR

## SHEET MILL GROUP

### METALLURGICAL TESTING CERTIFICATION

CB39601

Certificate Number: 287870  
Date Issued: 09/23/2008  
Page: 1 of 1

Nucor Steel-Crawfordsville  
4537 South Nucor Road  
Crawfordsville, IN 47933-0907

Order Number: 187594 - 0002  
Order Dimensions: 0.0401 in X 45.5000 in  
CR, CUT, 1050

Customer Name: CALSTRIP INDUSTRIES, INC.  
Customer Address: 7140 BANDINI BOULEVARD

LOS ANGELES

CA 90040

Cust PO Number: PC3783CS

SAE J403  
Suitable for conversion to ASTM A682  
Suitable for conversion to ASTM A684

Coil Number  
1348076.000

Rockwell B:

HEAD  
80

TAIL  
78

Part Number  
CR1050-040NOM

Grain Size: 8

### CHEMICAL ANALYSIS

Heat	Slab	C	Mn	P	S	Si	Cu	Sn	Ni	Cr	Mo	Al	N	V	Nb	Ti	B	Sb
285094	01	0.52	0.640	0.014	<0.001	0.234	0.163	0.012	0.068	0.091	0.028	0.030	0.010	<0.001	<0.001	0.004	<0.0005	0.003

WE HEREBY CERTIFY THE ABOVE IS CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION  
MELTED AND ROLLED IN THE USA

0F-0261 09/18/2007

NUCOR QUALITY ASSURANCE

*[Signature]*  
Date: 09/23/2008



*DHC*



**BODYCOTE TESTING GROUP – Division 455**  
10065 Freeman Avenue, Santa Fe Springs, California 90670  
Tel: (562) 948-1721 Fax: (562) 944-8389 [www.bodycotetesting.com](http://www.bodycotetesting.com)

Customer: CALSTRIP STEEL CORPORATION  
7140 BARDINI BOULEVARD  
LOS ANGELES, CA 90046-3388  
Material: 1050  
Specification:

AMS-QQ-S-708B ✓

PO/NO: 6519

P/N:

Lab No: 452279

Date: 09/26/08

Test Number: 180399 ✓  
Other: Flat test piece.

CERTIFICATION OF TEST				
CHEMISTRY ELEMENT		PERMITED UNITS	MANUFACTURER UNITS	ACTUAL
Unless otherwise indicated all units are in weight %				
C	Carbon	0.48	0.55	0.50
Mn	Manganese	0.60	0.90	0.65
Si	Silicon	0.15	0.30	0.23
P	Phosphorus		0.030	0.009
S	Sulfur		0.035	0.003

Conforms to requirements.

Comment: METHOD: XRF, COMBUSTION.

NOTE: Chemistry performed at BTG-221

Respectfully Submitted

*Marlon Garcia*  
Marlon Garcia  
QC Technician



Accredited

**Nadcap**

Materials Testing Laboratory

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BODYCOTE TESTING GROUP

PC 1/2  
INSPECTION



**BODYCOTE TESTING GROUP - Division 455**  
10005 Freeman Avenue, Santa Fe Springs, California 90670  
Tel: (562) 944-1721 Fax: (562) 944-8389 [www.bodycotetesting.com](http://www.bodycotetesting.com)

Customer: **CMSTRIP STEEL CORPORATION**  
7140 RANDINI BOULEVARD  
LOS ANGELES, CA 90048-2388

Material: 1850 Carbon Steel

Specification: ~~AMS-5088~~ ~~AMS-5088~~ ~~AMS-5088~~  
AMS-5088-8-7002 ✓

PO/80: 6519

W/M:

✓CN 10/24/08

Lab No: 452279 Date: 09/26/08

Other: Flat test piece.

### CERTIFICATION OF TEST

#### BEND TEST

Two transverse specimens were bent 180 Deg. over a 2T dia.  
mandrel. Visual inspection revealed no evidence of cracks.

REMARKS

288399 ✓

Conforms to requirements.

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Respectfully Submitted  
*Raymond Garcia*  
Raymond Garcia  
QC Technician

BODYCOTE TESTING GROUP

Accredited  
**Nadcap**  
Materials Testing Laboratory

TOTAL P.09

*PHC 2/2*



# NUCOR SHEET MILL GROUP

## METALLURGICAL TESTING CERTIFICATION

C134167

Certificate Number: 263573  
Date Issued: 20080410  
Page: 1 of 1

10F1

Chris Rogers  
8/2/08

Customer Name: CALSTRIP INDUSTRIES, INC.  
Customer Address: 7140 BANDING BOULEVARD  
LOS ANGELES

CA 90040

Cust PO Number: P03332CS

Order Number: 182351 - 0002  
Order Dimensions: 0.0240 in X 48.0000 in  
CR, CUT, 1050

Coil Number: 1287009.000  
L-Yield (ksi): 57.8  
L-Tensile (ksi): 69.7  
L-Elong (%): 28.8  
Part Number: cr1050-024nom

HEAD  
Rockwell B: 70

### CHEMICAL ANALYSIS

Heat	Slab	C	Mn	P	S	Si	Cu	Sn	Ni	Cr	Mo	Al	N	V	Nb	Ti	B	Sb
280399	04	0.50	0.660	0.010	0.001	0.222	0.098	0.008	0.032	0.043	0.021	0.029	0.009	0.002	0.001	0.003	0.0005	0.002

WE HEREBY CERTIFY THE ABOVE IS CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION  
MELTED AND ROLLED IN THE USA

NUCOR QUALITY ASSURANCE

Daniel E. Larson



PHC



HEARTLAND PRECISION FASTENERS  
301 Prairie Village Drive  
New Century, Ks. 66031  
Ph: (913)829-4447  
Fax: (913)829-7282

DATE 11/20/08



I.T.W. / C.I.P. CALIFORNIA  
11525 SHOEMAKER AVE.  
SANTA FE SPRINGS, CA 90670

PROCESS PER :AMS-QQ-P-416 REV-B  
:DRY FILM LUBRICANT PER NASM25027

I.T.W. P.O. # 77959-6414  
I.T.W. LOT # 85111E2  
H.P.F. LOT # 34951  
I.T.W. PART # MS21059L3  
WEIGHT = 1,355 LBS.

Heartland Precision Fasteners certifies that the above parts have  
Undergone embrittlement relief within 2 hours of plating via baking at  
375 degrees, +/- 25 degrees, for a minimum of 23 hours.

Authorized Signature:

Jefferson Robbins

SPC





## Son Set Consultants

PO Box 1536  
(7679 North 140<sup>th</sup> East Ave.)  
Owasso, OK 74055  
918-633-0740  
[www.weld-procedure.com](http://www.weld-procedure.com)

### Magnetic Particle Examination Record

Customer: ITW CIP Stampings Date: 20-Nov-2008 Time: 8am - 12 noon  
Lot No.: 85111E2 Reference Code/Specification: ASTM E1444-05  
MT Procedure No.: MT-01 Rev. No.: 1 Serial No. 13787 Technique: X Voke /    Prods  
Magnetizing Equipment: Parker Research DA-400  
Current Type: X A/C    D/C Magnetic Particle Type: X Wet    Dry X Fluorescent    Visible  
Amperage (Prod Technique Only) N/A Amps/inch of Prod Spacing Prod Spacing N/A  
Part/Item Material Type: Plate Nuts / CS Material Thickness .043  
Lighting Equipment: X Fluorescent Light Model # SB-100P Serial # SSC#BL#003  
   White Light using Parker Research Y300 or Y400 Probe light  
   Flashlight # of Batteries:    Type:    cell Max. Distance from object: 3-4 "  
Other:     
Light Intensity on surface to be examined: 100 foot candles    ~W/cm<sup>2</sup>  
Light Intensity Meter: Model # 401025 Ser.# LM-1 Calibration Due Date 01-Jan-2009  
Comments: No Rejectable Indications Noted

Examination Results			
Item #	Part Identification	Accept / Reject	Indication Description
1 - 34 each	34 each Plate Nuts Part No. : MS21059L3 Rev. 01 Lot # 85111E2	ACCEPT	No Rejectable Indications Noted

Examiner: Rick Gaffney

Qualification Level: MT Level III

Son Set Consultants  
AWS ATFS 000101  
State of OK # PL-88  
Rick R. Gaffney



API 510 # 1400

*[Signature]*



OK'd by  
Date 01/11/09  
By DP 11/09

SPC



## Son Set Consultants

PO Box 1536  
7879 North 140<sup>th</sup> East Ave.  
Owasso, OK 74055  
918-633-0740

E-Mail: [Rick@weld-procedure.com](mailto:Rick@weld-procedure.com) WEB: [www.weld-procedure.com](http://www.weld-procedure.com)

### MIL STD 1312-14 Stress Embrittlement testing / NASM 1312-14 Stress Embrittlement testing

Page 1 of 1

#### REPORT OF EXAMINATION

CUSTOMER: ITW CIP Stampings

JOB NUMBER: MS21059L3 Rev.01 Lot # 85111E2

FASTENER DESCRIPTION: Nut Self Locking Plate Two Lug Floating

PART NUMBER: MS21059L3 Rev.01 Lot # 85111E2

MANUFACTURER: ITW CIP Stampings

PART MATERIAL / FINISH: 1050 / Cadmium Plate  
per AMS-QQ-P-416 Rev B Type II, Class 2  
with dry film lubricant

**NOTE\*** Fastener information needed prior to performing the Stress Embrittlement testing:

1. Fastener material type / material finish - 1050 / Cadmium Plate per AMS-QQ-P-416 Rev B Type II, Class 2 with dry film lubricant
2. Fastener thread size & type - 190-32 UNJF-3B
3. Fastener description - Nut Self Locking Plate Two Lug Floating
4. Test time required - 23 hours min hold time

INSTALLATION TORQUE, ELONGATION OR LOAD: 2460 lbs min load.

TEST METHOD USED: extension method

TEST (PART HOLD ON LOAD / STRESS) TIME: 23 hours hold time

EXTERNALLY THREADED MEMBER (BOLT) USED: 10-32 1" long / AISI 1050 heat treated to 45HRC

CALCULATIONS IF APPLICABLE:  $e = 0.090893$

$$e = \frac{F}{B} \left[ X + 0.752 + \frac{YR^2}{S^2} - Y \right]$$

NDE PROCEDURE NO: Florescent Penetrant Test per SSC-PT-1-Rev#0

TYPE: fluorescent penetrant inspection

MATERIAL THICKNES: 0.019"

LIGHTING EQUIPMENT: ITW CIP Stampings

#### TEST RESULTS

LOCATION AND DESCRIPTION OF INDICATIONS IF ANY (Such as Linear or Rounded, Cracks, Seams, Laps, Cold shuts, Laminations, Surface porosity, and Lack of fusion.)

No indications noted

NDE EXAMINER: Rick R. Gaffney NDE Level III

NAME

LEVEL II / or Level III

DATE: 22-Nov-2008

TIME: 3:00 pm

Son Set Consultants  
NDE Level III  
Date of Cert. 8/14/08  
Rick R. Gaffney  
API 510 & 1600  
NDE III



SPC



**TEST REPORT**  
"Sample(s): Customer Supplied"



# ATLAS

**TESTING LABORATORIES, INC.**

ATLASLABS@ATT.NET

9820 SIXTH STREET • RANCHO CUCAMONGA, CA 91730 • 909-373-4130 FAX 909-373-4132

MS  
CALSTRIP STEEL CORPORATION  
ATTN: MARIO VARGAS  
7140 BANDINI BLVD.  
LOS ANGELES, CA. 90040

DATE: 10/27/08  
ATL# 859453  
PO# 6530  
MAT'L: 1050 ANN.

SPEC.: AMS-QQ-S-700B Cancelled Superseded by ASTM-A-684/06 which refers to ASTM-A-682/05

HT# 285094

**BEND TEST:** 180° Bend Test – Satisfactory

**CHEMICAL ANALYSIS: (% BY WEIGHT)**

ELEMENTS	MIN. REQ.	MAX. REQ.	RESULTS
Carbon	0.48	0.55	0.53
Manganese	0.60	0.90	0.67
Phosphorus	-	0.030	0.015
Sulfur	-	0.035	0.002
Silicon	0.10	0.30	0.23
Chromium	-	-	0.08
Nickel	-	-	0.07
Molybdenum	-	-	0.02
Copper	-	-	0.17

METHOD: ASTM-E-415/99a (2005)

ATE# 202

STDs: IARM31C/NBS 1262B, 63A, 64A

REMARKS: Material as tested conforms to requirements.

Respectfully submitted,

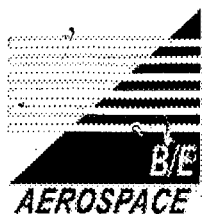
  
LYDIA PADILLA  
Quality Control

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TOTAL P.02

ILR





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
10	200	EA	MS20601AD4W2		87606372	CHERRY AEROSPACE SAN 11815			

  
Jason Lewis  
Vice President of Quality

02/20/14



**CHERRY®**  
**AEROSPACE**  
SPS Fastener Division, a PCC Company

Cherry Aerospace  
1224 East Warner Avenue  
Post Office Box 2157  
Santa Ana, CA 92707-0157  
USA



## PACKING LIST

Order No: S0363570  
Order Date: 10/27/11  
Print Date: 07/13/12

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0BZA19

Credit Terms: NET 30  
Net 30

Ship Via: YRC

FOB: Origin - Collect

### Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.


\*\*\*\*\*  
BRITISH AEROSPACE APPROVAL# BAe/AG/30158/M A to BAe/AG/QC/SC1 PART 3  
AIRBUS APPROVAL# 30114  
\*\*\*\*\*

GOODS OF UNITED STATES ORIGIN  
\*\*\*\*\*

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010  
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095  
\*\*\*\*\*

\*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
\*PREFERENCE FOR DOMESTIC SPECIALTY METALS  
\*\*\*\*\*

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site		Qty Open		Promised
		T	Location/Lot/Serial	Qty to Ship	UM	
2	CR9162-4-02		1600		EA	05/16/12
	Customer Item: MS20601AD4W2					
		K0104	87606372	6000.0		( )

**TEST REPORTS ENCLOSED**  
**DO NOT DESTROY**

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



**CHERRY®**  
**AEROSPACE**  
 SPS Fastener Division, a PCC Company

Cherry Aerospace  
 1224 East Warner Avenue  
 Post Office Box 2157  
 Santa Ana, CA 92707-0157  
 USA



# PACKING LIST

Order No: SO363570  
 Order Date: 10/27/11  
 Print Date: 07/13/12

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0BZA19

Credit Terms: NET 30  
 Net 30

Ship Via: YRC

FOB: Origin - Collect

## Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0  
 IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE  
 DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS  
 DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

\*\*\*\*\*  
 BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3  
 AIRBUS APPROVAL# 30114

\*\*\*\*\*  
 GOODS OF UNITED STATES ORIGIN

\*\*\*\*\*  
 FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010  
 TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

\*\*\*\*\*  
 \*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I  
 \*PREFERENCE FOR DOMESTIC SPECIALTY METALS

\*\*\*\*\*  
 CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site T LocationLot/Serial	Qty Open Qty to Ship UM	Promised Shipped
2	CR9162-4-02	1600	EA	05/16/12
	Customer Item: MS20601AD4W2			
		K0104 87606372	6000.0	( )

**TEST REPORTS ENCLOSED**  
**DO NOT DESTROY**

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

## CERTIFICATION

## ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

## Quality Assurance Representative

Signed

SIM NGUYEN

**CHERRY<sup>®</sup> AEROSPACE**1224 East Warner Avenue  
Santa Ana, CA 92707-0157Accredited  
**Nadcap**Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab**Final Inspection & Test Report**  
**Cherry<sup>®</sup> Rivet****An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	<b>Lot I.D. No.:</b> <b>87606372</b>  <b>Lot Size:</b> <b>6,000</b>  <b>MFG. Date:</b> <b>July 13, 2012</b>
CR9162-4-02	P	MIL-R-7885	D2	

**ASSEMBLY DATA**

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87574397	A68336	2117/ QQ-A-430	MIL-C-5541	None
Stem	87667278	A68909	2017/ QQ-A-430	MIL-C-5541	None

**W.O. #: 5456247****Final Lube: None****QUALITY CONFORMANCE/ACCEPTANCE RESULTS**

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		SPINDLE RETENSION	
	240		15	
	9		9	
			UnLocked	
RESULTS	348	357	38	45
	373		39	
	359		42	
	363		33	
	394		34	
	351		38	
	340		39	
LOAD VALUES IN POUNDS	341		35	

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
20	EXAMINATION	PASS	13	INSTALLATION (Min and Max Grips)	PASS

**Comments:**

Blind Fastener  
Refer to email from J. John Park Standards Engineer Association to Sohail Eshraghi.  
Dated on 1/25/2012 regarding the B diameter tolerance to be +/-0.004.

Tr. Rev.: 1  
Rev. Date: 7/13/2012

Inspector  
**S Nguyen**



Insp. Control #:

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.  
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.





**CHERRY<sup>®</sup> AEROSPACE**

1224 East Warner Avenue  
Santa Ana, CA 92707-0157



Accredited  
**Nadcap<sup>™</sup>**

Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab

## Final Inspection & Test Report Cherry<sup>®</sup> Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: 87606372

Rev: 1

### Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
MS20601AD4W2	1	MIL-R-7885	D2



# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

**CERTIFIED TEST REPORT**  
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER: <b>13170-ALLFAST</b>		CUSTOMER PART NUMBER: <b>8G37L1</b>		PRODUCT DESCRIPTION: <b>ALY-JUMBO</b>	
KAISER ORDER NUMBER: <b>214518953</b>	LINE ITEM: <b>1</b>	SHIP DATE: <b>05/07/2010</b>	ALLOY: <b>2117</b>	TEMPER: <b>O</b>	
WEIGHT SHIPPED: <b>37,109 Lbs</b>	QUANTITY: <b>182 pcs.</b>	BA NUMBER: <b>5356</b>	DIAM/DIA/THKNS: <b>0.375 in.</b>	WIDTH: <b>0.000 in.</b>	LENGTH: <b>0.0 in.</b>
SHIP TO:  <b>NICHOLS WIRE INC 1547 HELTON AVE FLORENCE, AL 36830</b>			SOLD TO:  <b>NICHOLS WIRE INC. 1547 HELTON AVE FLORENCE, AL 35630</b>		

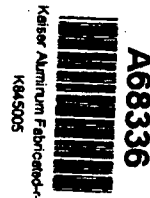
Test Code: 8000

## Actual Physical Properties

Lot No.	No. Tests	WGU
		ksi
845005		

## Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cz	Zn
845005									
65-4F2	Act.		0.38	0.39	2.9	0.14	0.40	0.07	0.18
150135									
Chemical	Min				2.2		0.20		
Limits	Max		0.8	0.7	3.0	0.20	0.50	0.10	0.25
			Others	Each	0.05	Max	Total	0.15	Max



CERTIFICATION

OCT 04 2011



Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

*John R. Despina*

Plant Serial: 8267

Kaiser Order Number: 214518953

Line Item: 1

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*[The page contains extremely faint, illegible text, likely bleed-through from the reverse side.]*

# KAISER ALUMINUM

FABRICATED PRODUCTS

*Best in Class*

**CERTIFIED TEST REPORT**  
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER: <b>K-1020-ALLFAST</b>		CUSTOMER PART NUMBER: <b>6Z37LB</b>		PRODUCT DESCRIPTION: <b>ALY-JUMBO</b>	
KAISER ORDER NUMBER: <b>624531025</b>	LINE ITEM: <b>1</b>	SHIP DATE: <b>04/11/2011</b>	ALLOY: <b>KN17</b>	TEMPER: <b>O</b>	
WEIGHT SHIPPED: <b>20564 lbs.</b>	QUANTITY: <b>88 pcs.</b>	B/L NUMBER: <b>8843</b>	DIAM/DAF/THKNS: <b>0.375 in.</b>	WIDTH: <b>0.000 in.</b>	LENGTH: <b>0.0 in.</b>
SHIP TO:  <b>FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630</b>			SOLD TO:  <b>FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630</b>		

Test Code: 8000

## Actual Physical Properties

Lot No.	No. Tests		WGU ksi	WGY ksi
846795	3	MIN	25.0	11.8
		MAX	25.2	12.3

## Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr
846795											
68-1F2	Act.		0.25	0.22	3.9	0.44	0.52	0.00	0.02	0.01	0.00
159318											
Chemical	Min		0.20		3.5	0.40	0.40				
Limits	Max		0.40	0.30	3.90	0.60	0.60	0.04	0.045	0.15	0.05
		Others	Each	0.05	Max		Total	0.15	Max		



Kaiser Aluminum Fabricated  
846795  
**A68909**

DEC 06 2011

## CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

Plant Serial: 16263

Kaiser Order Number: 624531025

Line Item: 1

# **KAISER ALUMINUM**

**FABRICATED PRODUCTS**

Kaiser Aluminum & Chemical  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

*Best in Class*

**CERTIFIED TEST REPORT**  
<http://Certs.KaiserAluminum.com>

## **Specifications**

QQ-A-430 REV C

## **Miscellaneous Notes**

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).



DEC 06 2011



## **CERTIFICATION**

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

*Warren Marcucci*

Plant Serial: 16263

Kaiser Order Number: 624531025

Line Item: 1



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO23060**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
9	20	EA	AN174-14		62972	MAC FASTENERS	ORPT4		

  
Jason Lewis  
Vice President of Quality

02/20/14

# MACFASTENERS, INC.

1110 Enterprise Street  
Ottawa, KS 66067  
Phone: 785-242-8812  
Fax: 785-242-4616

## Packing List

Bill B/E AEROSPACE CONSUMABLES MGMT  
To: 10000 NW 15TH TERRACE  
MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT  
To: 9835 NW 14th Street  
Miami, FL 33172  
United States

Shipment No: 57259  
Shipment Date: 01/30/13  
Ship Via: United Parcel Service  
Order Number: 45401  
Order Date: 06/04/12

Customer Code: BE AEROSPACE  
Phone: (305) 925-2600  
PO Number: 0JFA24  
Terms: Net 30 Days

LOT #62972 -

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	2,500	3,000	0		M	AN174-14 Bolt, machine-- Close Tolerance, Aircraft	7	62972



**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0JFA24

PART NUMBER: AN174-14

REV: 7

LOT NUMBER: 62972

MANUFACTURED QUANTITY: 6,000

MILL HEAT NUMBER: 8099283

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 01/29/13

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

<b>CUSTOMER</b> B/E AEROSPACE	<b>PO NUMBER</b> 0JFA24	<b>MFG QUANTITY</b> 6,000	<b>DATE</b> 01/29/13
<b>PART NUMBER</b> AN174-14	<b>REV</b> 7	<b>LOT NO</b> 62972	<b>PROCUREMENT SPEC</b> NASM6812

<b>MATERIAL</b> TYPE 8740	<b>MATERIAL SPECIFICATION</b> MIL-S-6049/AMS6322	<b>MILL HEAT NUMBER</b> 8099283	<b>SUPPLIER</b> JOHNSTOWN										
C .41	Si .25	Mn .86	P .010	S .013	Cu .15	Ni .42	Cr .50	Mo .21	V .003	B	Fe	Al .030	Ti
	Co	N .0069	Bi	Pb	Mg	Zn		Nb	Sn 008			Other	

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
5,600	
5,560	
5,560	
5,580	
5,560	
MIN. REQ.	4080

DOUBLE SHEAR STRENGTH POUNDS / PSI	
8,020	
8,000	
8,000	
8,040	
8,020	
MIN. REQ.	7360

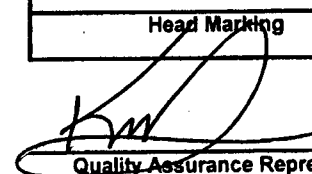
HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS	
27-28 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3		System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22
		System <input type="checkbox"/> 23	

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**



# Johnstown Wire Technologies

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
444512

**TEST REPORT**  
LOT NUMBER  
K-8099283  
SALES ORDER / RLS  
009178 / 3

SOLD TO

Mac Fasteners, Inc.  
1110 Enterprise Street  
Ottawa, KS 66067  
USA



CUSTOMER P.O. 50516	CUSTOMER PART 8740- .2465	QUANTITY 11,095 LBS	COILS 7	LADING NO 00113446	SHIPMENT DATE 10/16/2012							
<b>SPECIFICATION MacFast-87246</b> <b>AMS2301; AMS8322; AMS-S-6049A; MIL-S-6049A 8740 DFARS T8 95000 PSI Max Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spheroidize Annealed In Process Heavy Phos &amp; Light Lube Ctd</b> <b>Size: .2465 +.0005 -.0005</b>												
CERTIFICATION REQUIREMENTS												
<b>Chemical</b>												
C	Mn	P	S	Si	Al	Ni	Cr	Mo	Cu	V		
.41	.86	.010	.013	.25	.030	.42	.50	.21	.15	.003		
Co	Ti	N	Sn									
.001	???????	.0069	.008									
<b>Physical</b>												
AMS 2301	J1	J10	J11	J12	J2	J3	J5	J4	J6	J7	J8	J9
0000	58	40	38	37	57	56	54	55	52	49	46	43
MacroClean E-381 112												
<b>Mechanical</b>												
TEST	UNITS		HIGH		LOW		AVERAGE					
Tensile Str	Lbs/SqIn		83000		82000		83000					
RA Per Cent	Percent		68.7		68.2		68.5					
Decarb FFD	Inches		.000		.000		.000					
Surface def. depth	Inches		.002		.002		.002					
<b>Rod / Melt Source</b>												
Rod Source Republic	Melt Source Republic		Country of Origin USA		Nafta Yes							
End of Certification												

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*D. L. Deetscreek*  
D. L. Deetscreek  
Director of Quality Assurance



1807 EAST 28TH ST.  
 JOHNSTOWN, PA 15136-5886

JOHNSTOWN, PA 15136  
 PHONE: 800-439-5886

# CERTIFICATE OF TESTS

REPUBLIC STEEL

5/11/2012 3:10:00 PM  
 PAGE 1 OF 2

PURCHASE ORD: 82030  
 PART NUMBER: FXT40AA-.4375  
 ORDER NUMBER: 1513715 - 01  
 HEAT: 8099283  
 CHARGE ADDRESS

PURCHASE ORDER DATE: 2/20/2012  
 ACCOUNT NUMBER: 5672-1921-01  
 SCHEDULE: 0170-92  
 REVISION: 1

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES  
 124 LAUREL AVE  
 JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES  
 EDWARD ZAPOLA  
 C/O C & EL RAILROAD  
 TRACK 629  
 JOHNSTOWN, PA 15901

## MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA  
 10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS  
 JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 5049A & AMD 1 COND B-1 EXC MARK &  
 UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY  
 RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
 SIZE: RDS .4375 DIAM X COIL  
 RDS 11.1125MM DIAM X COIL

## LADLE CHEMISTRY %

C	MN	P	S	SI	CU	NI	CR
0.41	0.86	0.010	0.013	0.25	0.15	0.42	0.50
V	MO	SN	AL	B	CB	N	
0.003	0.21	0.008	0.030	0.0000	0.001	0.0069	

## CALCULATED TESTS

REDUCTION RATIO 863.2 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER  
 ASTM A29.

## SEMI - FINISHED RESULTS

JOMINY HARDNESS TEST SAE J406/ASTM A255  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
 58 57 56 55 54 52 49 46 43 40 38 37 35 34 34 33 31 31 30 30 29 29 29 29

MACRO ETCH TEST ASTM E381/MIL STD 430  
 ETCHANT: HCL TEMPERATURE: 170  
 S R C  
 PCE 13 2 1 1 2

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300  
 IND AVG IND AVG  
 FREQ FREQ SEV SEV  
 PCE 03 0 0 0 0

## FINISHED SIZE RESULTS

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
 ETCHANT - NITAL MAGNIFICATION - 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
PCE 6880	0.002	0	0.002

CAPABLE OF SEAM DEPTH 1/4 MAX DIAMETER NOT LESS THAN .005 MAX

G. KRUTH  
 DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

*G. Kruth*

1001 EAST 25TH ST.  
MANSFIELD, OH 44902-4300LORAIN, OH 44042  
FAX: 330-532-5684

## CERTIFICATE OF TESTS

REPUBLIC STEEL

5/11/2012 3:10:00 PM  
PAGE 2 OF 2PURCHASE ORD: 82030  
PART NUMBER: FXT40AA-.4375  
ORDER NUMBER: 1513715 - 01  
HEAT: 8099283PURCHASE ORDER DATE: 2/20/2012  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 0170-92  
REVISION: 1

## NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

## NOTES (CONTINUED)

ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

## SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: BF BLOOM RED. RATIO: 863.2

END OF DATA

CC

END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684  
FILE 1 COPYG. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 01/29/13

PO NUMBER: 0JFA24

MANUFACTURED QUANTITY: 6,000

LOT NUMBER: 62972

MATERIAL: TYPE 8740

PART NUMBER: AN174-14

REVISION: 7

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 27-28 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
QUALITY ASSURANCE REPRESENTATIVE

# **DE TRAY**

## **Plating Works**

**Specialized Electro-Plating and Polishing**  
**Nickel** **Passivate**  
**Copper** **Bright Dip**  
**Decorative Chrome** **Strip Copper**  
**Satin Chrome** **Descale**  
**Zinc**  
**Cadmium**

**10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052**  
**Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@aol.com**

January 25, 2013

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

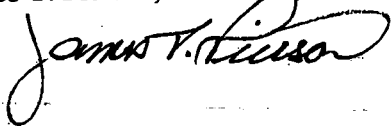
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-  
QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 3. Please reference our  
Invoice#167022 dated 01/25/2013 for:

Lot#-62972

P.N.- AN174-14

James T. Pierson, Vice-President



DE TRAY PLATING WORKS